CRPL-F51

IONOSPHERIC DATA

ISSUED

NOVEMBER 1948

PREPARED BY CENTRAL RADIO PROPAGATION LABORATORY
National Bureau of Standards
Washington, D.C.

CRPL-F51 CENTRAL RADIO PROPAGATION LABORATORY
NATIONAL BUREAU OF STANDARDS
WASHINGTON,D.C.

Issued
26 Nov.1948

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CONTENTS

TERMINOLOGY AND SCALING PRACTICES

The symbols and terminology used in this report are those adopted by the International Radio Propagation Conference, and given in detail on pages 24 to 26 of the report IRPL-C61, "Report of International Radio Propagation Conference," and in the section on "Terminology" in report IRPL-F5.

Beginning with IRPL-F14 the symbol L, defined as follows, is used in detailed tabulations of hourly values of ionosphere characteristics observed at Washington:

L or l = critical frequency, muf, or muf factor for F1 layer omitted because no definite and abrupt change in slope of the h'f curve occurs either for the first reflection or for any of the multiples.

In the past, ionospheric conditions were summarized on a monthly basis by using average or mean values for each hour of the day for each month. However, following the recommendations of the International Radio Propagation Conference, held in Washington April 17 to May 5, 1944, beginning with data for January 1, 1945, median values are published wherever possible.

Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The monthly median values used here are the values equaled or exceeded on half the days of the month at the given hour. The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in the report referred to above, IRPL-C61.

a. For all ionospheric characteristics:
Values missing because of A, B, C, or F (see terminology referred to above) are omitted from the median count.

b. For critical frequencies and virtual heights:
Values of f^oF2 (and f^oE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count. See CRPL-F38, page 9.
Values missing because of D are counted as equal to or greater than the upper limit of the recorder.
Values missing because of G are counted:
1. For f^oF2, as equal to or less than f^oF1.
2. For h'F2, as equal to or greater than the median.
Values missing for any other reason are omitted from the median count.

c. For muf factors (M-factors):

Values missing because of G are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because no Es reflections appeared, the equipment functioning normally otherwise, are counted as equal to or less than the median f^oE, or equal to or less than the lower frequency count of the recorder.

Values of fEs missing for any other reason, and values of hEs missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Beginning with CRPL-F33, an additional group of symbols is used in recording the Washington, D. C., data. The list of additional symbols and their meanings follows:

N - unable to make logical interpretation.
P - trace extrapolated to a critical frequency.
Q - the F1 layer not present as a distinct layer.
R - curve becomes incoherent near the F2 critical frequency.
S - no observation obtainable because of interference.
V - forked record

Z - triple split near critical frequency.

For a more detailed explanation of the meaning and use of these symbols, see the report CRPL-7-1, "Preliminary Instructions for Obtaining and Reducing Manual Ionospheric Records."

MONTHLY AVERAGE AND MEDIAN VALUES OF WORLD-WIDE IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 36 and figures 1 to 71 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL predictions of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Australian Council for Scientific and Industrial Research,
Radio Research Board:
Brisbane, Australia
Canberra, Australia
Hobart, Tasmania

Australian Department of Supply and Shipping, Bureau of
Mineral Resources, Geophysical Section:
Watheroo, W. Australia

British Department of Scientific and Industrial Research,
Radio Research Board:
Lindau/Harz, Germany

Canadian Radio Wave Propagation Committee:
Ottawa, Canada
St. John's, Newfoundland

South African Council for Scientific and Industrial Research:
Johannesburg, Union of S. Africa
Capetown, Union of S. Africa

National Bureau of Standards (Central Radio Propagation Laboratory):
Baton Rouge, Louisiana (Louisiana State University)
Boston, Massachusetts (Harvard University)
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Palmyra I.
San Francisco, California (Stanford University)
San Juan, Puerto Rico (University of Puerto Rico)
Trinidad, British West Indies
Washington, D. C.
White Sands, New Mexico
Wuchang, China (National Wuhan University)

All India Radio (Government of India), New Delhi, India:
Bombay, India
Delhi, India
Madras, India

Radio Wave Research Laboratory, Central Broadcasting Administration:
Chungking, China
Lanchow, China
Nanking, China
Peiping, China

French Ministry of Naval Armaments (Section for Scientific Research):
Fribourg, Germany

National Laboratory of Radio-Electricity (French Ionospheric Bureau):
Bagneux, France

Philippine Republic, Radio Control Division, Department of Commerce and Industry:
Leyte, Philippine Is.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when f^oF2 is less than or equal to f^oF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot No.			
	1948	1947	1946	1945
December		126	85	38
November		124	83	36
October	116	119	81	23
September	117	121	79	22
August	123	122	77	20
July	125	116	73	
June	129	112	67	
May	130	109	67	
April	133	107	62	
March	133	105	51	
February	133	90	46	
January	130	88	42	

IONOSPHERIC DATA FOR EVERY DAY AND HOUR AT WASHINGTON, D. C.

The data given in tables 37 to 48 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Terminology and Scaling Practices."

IONOSPHERE DISTURBANCES

Table 49 presents ionosphere character figures for Washington, D. C., during October 1948, as determined by the criteria presented in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

Table 50 lists for the stations whose locations are given the sudden ionosphere disturbances observed on the continuous field intensity recordings made at the Sterling Radio Propagation Laboratory during October 1948.

Table 51 lists for the stations whose locations are given the sudden ionosphere disturbances observed at the Point Reyes, California, receiving station of RCA Communications, Inc., for October 15 and 18, 1948.

Table 52 lists for the stations whose locations are given the sudden ionosphere disturbances observed at the Brentwood and Somerton, England, receiving stations of Cable and Wireless, Ltd., for October 5, 6, 7, 9, 11, and 13, 1948.

Table 53 lists for the stations whose locations are given the sudden ionosphere disturbances observed at the Platanos, Argentina, receiving station of the International Telephone and Telegraph Corporation for August 1 and 5, and September 16, 1948.

Table 54 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, September 1948, compared with the CRPL daily radio disturbance warnings, which are primarily for the North Atlantic paths, the CRPL weekly radio propagation forecasts of probable disturbed periods, and the half-day Cheltenham, Maryland, geomagnetic K-figures.

The radio propagation quality figures are prepared from radio traffic and ionospheric data reported to the CRPL, in a manner basically the same as that described in IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," issued February 1, 1946. The scale conversions for each report are revised for use with the data beginning January 1948, and statistical weighting replaces what was, in effect, subjective weighting. Separate master distribution curves of the type described in IRPL-R31 were derived for the part of 1946 covered by each report; data received only since 1946 are compared with the master curve for the period of the available data. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. Each report is given a statistical weight which is the reciprocal of the departure from linearity. The half-daily radio propagation quality figure, beginning January 1948, is the weighted mean of the reports received for that period.

These radio propagation quality figures give a consensus of opinion of actual radio propagation conditions as reported by the half day over the two general areas. It should be borne in mind, however, that though the quality may be disturbed according to the CRPL scale, the cause of the disturbance is not necessarily known. There are many variables that must be considered. In addition to ionospheric storminess itself as the cause, conditions may be reported as disturbed because of seasonal characteristics, such as are particularly evident in the pronounced day and night contrast over North Pacific paths during the winter months, or because of improper frequency usage for the path and time of day in question. Insofar as possible, frequency usage is included in rating the reports. Where the actual frequency is not shown in the report to the CRPL, it has been assumed that the report is made on the use of optimum working frequencies for the path and time of day in question. Since there is a possibility that all the disturbance shown by the quality figures is not due to ionospheric storminess alone, care should be taken in using the quality figures in research correlations with solar, auroral, geomagnetic, or other data. Nevertheless, these quality figures do reflect a consensus of opinion of actual radio propagation conditions as found on any one half day in either of the two general areas.

AMERICAN AND ZÜRICH PROVISIONAL RELATIVE SUNSPOT NUMBERS

Table 55 presents the daily American relative sunspot number, R_A, computed from observations communicated to CRPL by observers in America and abroad. Beginning with the observations for January 1948, a new method of reduction of observations is employed such that each observer is assigned a scale-determining "observatory coefficient," ultimately referred to Zürich observations in a standard period, December 1944 to September 1945, and a statistical weight, the reciprocal of the variance of the observatory coefficient. The daily numbers listed in the table are the weighted means of all observations received for each day. Details of the procedure will be published shortly. The American relative sunspot number computed in this way is designated R_A. It is noted that a number of observatories abroad, including the Zürich observatory, are included in R_A. The scale of R_A was referred specifically to that of the Zürich relative sunspot numbers in the standard comparison period; since that time, R_A is influenced by the Zürich observations only in that Zürich proves to be a consistent observer and receives a high statistical weight. In addition, this table lists the daily provisional Zürich sunspot numbers, R_Z.

SOLAR CORONAL INTENSITIES OBSERVED AT CLIMAX, COLORADO

In tables 56a and 56b are listed the intensities of the green (5303A) line of the emission spectrum of the solar corona as observed during October 1948 by the High Altitude Observatory of Harvard University and the University of Colorado at Climax, Colorado, for east and west limbs, respectively, at 5° intervals of position angle north and south of the solar equator at the limb computed to the nearest 5°. A correction, P, as listed, has been applied to the position angles of the actual observations which were on astronomical coordinates. The time of observation is given to the nearest tenth of a day, GCT. The tables of coronal observations in CRPL-F29 to F41 listed the data on astronomical coordinates; the present format on solar rotation coordinates is in conformity with the tables of CRPL-1-4, "Observations of the Solar Corona at Climax, 1944-46."

Tables 57a and 57b give similarly the intensities of the first red (6374A) coronal line; tables 58a and 58b list the intensities of the second red (6704A) coronal line. The following symbols are used in tables 56, 57, and 58: a, observation of low weight; -, corona not visible; and x, position angle not included in plate estimates.

NOTE ON $f^{o}F1$ AT TROPICAL STATIONS

Mr. R. F. Carle, engineer-in-charge of the CRPL Trinidad Radio Propagation Field Station, has called attention to a phenomenon that is often observed on ionosphere records at Trinidad and other tropical ionosphere stations. Fig. A illustrates the phenomenon.

F1 ORDINARY WAVE EXTRAPOLATED TO $f^{o}F1$

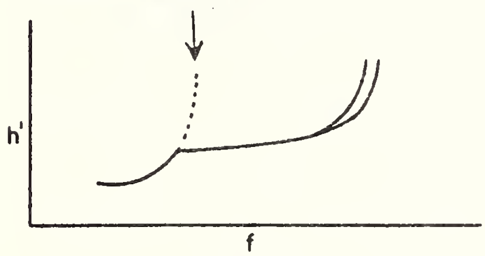

Fig. A

F1 EXTRAORDINARY WAVE EXTRAPOLATED TO $f^{x}F1$

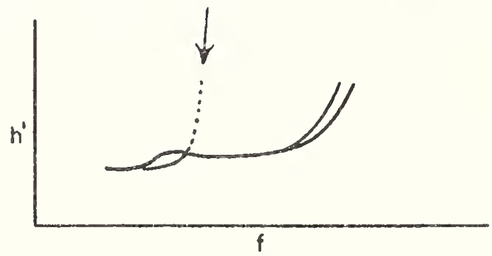

Fig. B

There is a definite change of slope of the h'f curve where the F1 and F2 traces intersect. However, the slope of the F1 part of the curve does not approach the vertical at the change of slope as it should near a critical frequency. Also, no retardation is observed in the F2 part of the curve near the change in slope.

This indicates that the F2-layer ionization overlaps that of the F1 layer, with greater F2-layer ionization extending below the level of maximum F1 ionization. Therefore, in cases of this type, the convention of taking the change of slope as $f^{o}F1$ gives an erroneous value, since, presumably, the actual $f^{o}F1$ would be observed at a higher frequency if the F2-layer ionization did not obscure it.

In the future, in cases of this type, it is recommended that the F1 trace be extrapolated to obtain the $f^{o}F1$, as indicated by the dotted line of Fig. A. Of course, the $f^{o}F1$ obtained in this way is doubtful, and should be recorded in parentheses on the tabulation sheet, accompanied by the symbol P. The usual care should be taken to avoid extrapolating too far. When available, the extraordinary-wave trace may assist in the interpretation of this phenomenon, as indicated in Fig. B. In cases of this type, the doubtful deduced value of $f^{o}F1$ should be recorded in parentheses on the tabulation sheet with the symbols, J and P.

This recommendation applies only to the type of record considered here. Established practice should be followed in scaling records showing retardation in the F2 trace near the f^oF1, and in cases where the change of slope between F1 and F2 is gradual.

Since the phenomenon considered here is a common occurrence at Trinidad and other tropical stations, median values of f^oF1 reported in the past from these locations are probably too low.

ERRATA

1. CRPL-F50, p. 15, table 21: f^oF2 column at 07 should read 9.6; p. 52, fig. 41: The corresponding change should be made in the curve.

2. CRPL-F50, p. 16, table 25: f^oE column at 06 should read 2.5.

3. CRPL-F50, p. 19, table 38: In the F2-M3000 column, all values should be inclosed in parentheses.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D.C. (39.0°N, 77.5°W) October 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270	5.3						2.8
01	270	5.2						2.8
02	260	4.7						(2.8)
03	250	4.7						2.8
04	250	4.2						2.8
05	250	3.7						2.8
06	250	4.1						2.9
07	230	6.8			110	2.1		3.3
08	230	8.8			100	2.8		3.3
09	240	9.8	215	4.2	100	3.1		3.3
10	240	10.6	210	4.6	100	(3.3)		3.1
11	250	11.0	210		100	(3.3)		3.1
12	260	11.5	210		100	3.5		3.1
13	255	11.6	220		100	3.4		3.0
14	250	11.4	220		100	3.3		3.0
15	240	(11.5)	230		100	3.1		3.1
16	230	(10.9)	230		100	2.7		3.1
17	230	(9.8)			110	2.1		3.2
18	220	(9.3)						3.1
19	220	8.2						3.1
20	230	7.1						3.0
21	240	6.4						2.9
22	250	(5.9)						2.9
23	250	5.6						2.8

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Lindau/Harz, Germany (51.6°N, 10.1°E) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	5.6					3.2	
01	300	6.4					3.2	
02	300	4.9					3.1	
03	300	4.6					3.2	
04	300	4.4					3.2	
05	290	4.0					3.2	
06	230	5.2					3.4	
07	215	6.7	205		110	2.4	3.3	
08	215	7.6	205		105	2.8	3.4	
09	215	7.9	200	4.7	105	3.1	3.6	
10	215	8.4	200	4.8	100	3.3	4.0	
11	220	9.1	200	4.8	100	3.4	3.8	
12	270	9.6	200	4.9	100	3.4	3.8	
13	215	9.1	200	4.9	100	3.5	3.5	
14	220	9.2	200		100	3.4	3.4	
15	220	9.2	200		100	3.2	3.4	
16	220	9.4	205		100	3.0	3.6	
17	225	9.4			105	2.6	3.4	
18	220	9.6			110		3.4	
19	225	9.0					3.4	
20	220	8.0					3.5	
21	230	6.8					3.2	
22	250	6.0					3.3	
23	300	5.8					3.0	

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 12 minutes.

Table 3

St. John's Newfoundland (47.6°N, 52.7°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	4.7						2.9
01	280	4.2						2.9
02	280	3.9						2.9
03	280	3.7						2.9
04	270	3.6						3.0
05	270	3.6						3.0
06	265	5.0			110	2.0		3.0
07	260	6.2	240	3.8	110	2.4		3.1
08	260	7.1	230	4.2	110	2.9		3.0
09	275	8.1	230	4.6	115	3.2		3.0
10	280	8.2	230	4.9	110	3.4		2.9
11	275	8.8	220	5.0	110	3.6		2.9
12	300	8.9	220	5.2	110	3.6		2.8
13	300	9.2	225	5.1	110	3.6		2.8
14	280	9.6	230	4.8	110	3.5		2.9
15	270	9.4	230	4.7	110	3.3		2.9
16	260	9.4	240	4.2	110	2.9		2.9
17	260	9.6	250	4.0	110	2.6		2.9
18	260	9.5			110	2.0	1.6	3.0
19	240	8.6					1.4	2.9
20	230	7.5						2.8
21	240	6.6						2.8
22	260	5.8						2.8
23	280	5.0						2.8

Time: 52.5°W.
Sweep: 1.2 Mc to 20.0 Mc, manual operation.

Table 4

Ottawa, Canada (45.5°N, 75.8°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	360	5.0						2.5
01	355	4.6						2.6
02	365	4.6						2.6
03	360	4.4						2.7
04	360	4.2						2.7
05	340	4.3						2.7
06	305	5.1						2.8
07	280	6.5						2.9
08	280	7.4	250	4.3		3.1		2.9
09	290	8.1	240	4.8	120	3.3		2.8
10	290	8.8	220	4.9	120	3.6		2.8
11	300	9.4	230	5.1	120	3.7		2.7
12	300	9.1	230	5.2	120	3.6		2.7
13	320	9.5	240	5.2	120	3.6		2.6
14	310	9.3	240	5.2	120			2.7
15	285	9.0	240	5.0				2.7
16	270	9.1	250	4.6				2.7
17	280	9.2						2.7
18	280	9.0						2.7
19	280	8.3						2.6
20	290	7.4						2.7
21	310	6.8						2.7
22	340	5.9						2.6
23	350	5.5						2.5

Time: 75.0°W.
Sweep: 1.7 Mc to 18.0 Mc, manual operation.

Table 5

Boston, Massachusetts (42.4°N, 71.2°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	298	5.6						2.6
01	300	5.0						2.6
02	305	4.8						2.6
03	290	4.5						2.6
04	290	4.4						2.7
05	275	4.8						2.8
06	275	[illegible]						3.0
07	265	6.6						2.9
08	270	7.3						3.0
09	285	7.2	242	4.9				3.0
10	295	7.2	245	5.0				2.9
11	340	7.5	250	5.1				2.8
12	328	7.2	262	5.4				2.8
13	305	7.5	270	5.2				2.8
14	280	7.4	280	4.8				2.8
15	275	7.6						2.9
16	275	8.3						2.9
17	260	8.2						3.0
18	260	8.3						2.9
19	268	7.0						2.8
20	275	6.8						2.7
21	285	6.4						2.7
22	295	6.2						2.6
23	290	6.0						2.6

Time: 75.0°W.
Sweep: 0.8 Mc to 14.0 Mc in 1 minute.

Table 6

San Francisco, California (37.4°N, 122.2°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	4.8						2.5
01	310	4.8						2.5
02	300	4.7						2.5
03	300	4.7						2.5
04	290	4.5						2.6
05	300	4.4						2.6
06	260	5.4						2.8
07	240	7.6			120	2.6		3.0
08	240	8.7	230		120	3.1		3.0
09	260	9.3	220		120	3.4		2.9
10	275	9.4	220		120	3.6		2.8
11	280	10.1	220	5.2	120	3.8		2.7
12	300	10.5	220	5.4	120	3.8		2.6
13	300	10.8	220		120	3.7		2.7
14	280	10.6	220	5.1	120	3.7		2.7
15	260	10.3	230		120	3.5		2.8
16	240	10.0	220		120	3.2		2.9
17	240	9.6			120	2.6		2.9
18	240	9.2						3.0
19	230	8.0						2.9
20	240	6.6						2.9
21	240	5.8						2.8
22	270	5.0						2.7
23	280	4.9						2.6

Time: 120.0°W.
Sweep: 1.3 Mc to 18.5 Mc in 4 minutes 30 seconds.

Table 7

White Sands, New Mexico (32.3°N, 106.5°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	5.2						2.5
01	300	5.2						2.5
02	285	5.3						2.6
03	230	5.0						2.6
04	275	5.0					2.2	2.6
05	280	4.8					2.4	2.6
06	260	6.2			120	(1.9)	3.0	2.8
07	240	8.4			120	2.6	4.2	3.1
08	240	9.4	225		120	3.1	4.3	3.0
09	230	9.6	220	5.0	110	3.4	4.2	2.9
10	290	10.0	220	5.4	120	3.7	4.3	2.7
11	315	10.4	220	5.5	120	3.8		2.7
12	320	11.0	220	5.6	120	3.8		2.7
13	310	11.4	220	5.4	120	3.8		2.7
14	300	11.4	225	5.4	120	3.7		2.7
15	280	11.0	225	5.0	110	3.5		2.7
16	255	10.9	230		110	3.1	3.9	2.8
17	240	10.4			120	2.5	3.4	2.9
18	240	10.0			110	(1.8)	2.7	3.0
19	220	8.3					1.9	2.9
20	240	6.9						2.8
21	250	5.9					2.3	2.7
22	280	5.5						2.7
23	280	5.3						2.6

Time: 105.0°W.
Sweep: 0.79 Mc to 14.0 Mc in 2 minutes.

Table 8

Wuchang, China (30.6°N, 114.4°E) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	8.2					2.4	2.9
01	270	7.8					2.3	2.9
02	250	7.2						3.0
03	250	6.6						3.0
04	245	5.9						2.9
05	250	5.1						2.9
06	255	6.6			130	1.6		3.1
07	230	9.0			110	2.4	3.2	3.4
08	230	10.5			110	3.0	4.0	3.3
09	225	10.5		(5.0)	105	3.4	4.5	3.2
10	260	11.2	212	5.6	100	3.6	4.2	3.0
11	262	12.2	210	5.9	100	3.7	4.2	2.9
12	280	13.5	210	5.4	100	3.9		2.9
13	290	13.8	210	5.4	100	3.8		2.9
14	290	14.2	220	5.6	100	3.8		2.9
15	285	15.2	225	5.4	100	3.6	4.0	2.9
16	265	15.3	220	5.0	100	3.3	3.0	3.0
17	240	14.0			100	2.9	3.4	3.0
18	242	13.2			110	2.1	3.8	3.0
19	240	12.5					3.5	3.0
20	230	12.0					2.8	2.9
21	245	10.0					2.8	2.9
22	255	9.0					2.6	2.9
23	265	9.2					2.8	2.9

Time: 120.0°E.
Sweep: 1.2 Mc to 19.0 Mc in 15 minutes, automatic operation.

Table 9

Baton Rouge, Louisiana (30.5°N, 91.2°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	5.5						2.8
01	300	5.4						2.8
02	300	5.4						2.8
03	300	5.2						2.8
04	290	5.2						2.8
05	290	5.1						2.9
06	270	6.3						3.1
07	260	8.6	230		120	2.6		3.2
08	260	9.4	220		120	3.2		3.1
09	280	10.0	220		120	(3.6)		3.1
10	290	10.2	220		110	(3.6)		3.0
11	300	11.2	(225)		110	(3.7)		2.9
12	310	11.2			110	(3.6)		2.9
13	310	11.6			120	(3.7)		2.9
14	305	11.7	230		110			2.9
15	295	11.6	230		115	(3.5)		2.9
16	290	11.0	230		120	3.2		2.9
17	265	10.6	230		120	2.7		3.0
18	230	10.0						3.0
19	220	8.0						3.1
20	245	6.9						3.0
21	275	6.3						2.9
22	280	6.2						2.9
23	290	5.7						2.9

Time: 90.0°W.
Sweep: 2.12 Mc to 15.3 Mc in 8 minutes 30 seconds, automatic operation.

Table 10

Maui, Hawaii (20.8°N, 156.5°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	210	9.0						3.2
01	210	7.6						3.2
02	210	6.8						3.3
03	210	5.4						3.2
04	220	5.1						3.1
05	250	4.2						3.1
06	250	4.8						3.0
07	210	8.2			130	2.4		3.5
08	200	9.5			110	3.1		3.4
09	200	11.1			100	3.4	4.2	3.2
10	230	12.4	190		105	3.5	4.6	3.1
11	260	13.5	200		110	3.7	4.7	3.0
12	280	14.1	200	5.7	100			3.1
13	280	14.7	200	5.8	100	4.0		3.0
14	270	15.4	200	5.7	100	3.9	4.7	3.1
15	260	15.5	200	6.0	100	3.7	4.6	3.2
16	240	15.4	200		100	3.3	4.4	3.2
17	210	14.2			100	2.8	4.1	3.2
18	200	13.4				2.3	3.2	3.3
19	200	12.4					2.8	3.4
20	200	12.2					2.8	3.2
21	210	11.2						3.1
22	220	11.0					2.6	3.2
23	210	10.5						3.2

Time: 150.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 11

San Juan, Puerto Rico (18.4°N, 66.1°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		8.0						2.8
01		8.0						2.9
02		7.1						2.9
03		6.2						2.8
04		6.2						2.8
05		6.1						2.8
06		6.0						3.0
07	220	8.3						3.2
08	240	9.5				3.1		3.1
09	250	10.5				3.5		2.9
10	280	11.5				(3.8)		2.8
11	290	11.6		5.5		(3.9)		2.7
12	310	12.0		5.6		4.0		2.7
13	300	12.4		5.6		4.0		2.7
14	300	12.5		5.5		4.0		2.7
15	300	12.5				3.8		2.7
16	280	12.5				3.4	4.7	2.8
17	260	11.8				3.0	4.4	2.8
18	250	11.0						2.9
19	250	10.0						2.8
20		9.1						2.8
21		8.9						2.8
22		8.4						2.7
23		8.2						2.8

Time: 60.0°W.
Sweep: 2.8 Mc to 13.0 Mc in 9 minutes; supplemented by manual operation.

Table 12

Guam I. (13.6°N, 144.9°E) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	250	13.2					3.2	3.0
01	240	12.5					2.5	(3.2)
02	230	11.5					2.4	3.3
03	230	8.2					1.8	3.1
04	230	7.6					2.6	3.2
05	230	6.9					2.5	3.2
06	240	6.8					3.6	3.1
07	250	9.8					4.6	3.2
08	240	11.6					3.9	3.0
09	230	12.8					4.4	2.8
10	220	13.1					4.6	(2.4)
11	220	13.5					4.4	2.4
12	215	13.0	210	5.8			4.8	2.3
13	215	13.6	215	5.7			5.0	2.3
14	220	14.2	220				5.0	2.5
15	230	15.0	220	6.2			4.8	2.6
16	240	15.2	230				5.0	2.6
17	250	15.2					5.2	2.6
18	260	14.8					5.0	2.5
19	340	14.2					3.4	2.2
20	330						2.4	
21	280						2.5	
22	250						3.2	
23	260	(13.5)					4.0	(2.7)

Time: 150.0°E.
Sweep: 1.25 Mc to 19.0 Mc in 12 minutes, manual operation.

Table 13

Trinidad, Brit. West Indies (10.6°N, 61.2°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	10.0						2.9
01	250	8.5						2.8
02	250	7.4						2.8
03	250	6.8						3.0
04	250	6.2						2.9
05	250	5.4						2.8
06	260	6.4			100		2.4	3.0
07	240	8.6			120	2.7	3.1	3.2
08	240	10.4	220	4.2	120	3.2	4.0	3.0
09	270	11.4	230	5.0	120	3.5	4.2	2.9
10	280	12.1	220	5.4	120	3.9	4.6	2.8
11	300	12.6	220	5.5	120	4.1	4.6	2.8
12	300	13.1	220	5.6	120	4.1	4.8	2.8
13	330	13.6	230	5.8	120	4.1	4.8	2.8
14	320	13.8	230	5.4	120	4.0	5.0	2.8
15	300	13.6	240	5.1	120	3.7	5.0	2.8
16	280	12.9	240	4.8	120	3.3	5.0	2.8
17	260	12.7	250		120	2.7	4.7	2.7
18	260	12.0			100		4.0	2.8
19	270	11.4					4.0	2.7
20	266	11.3					2.4	2.7
21	270	10.8						2.7
22	270	10.1						2.8
23	270	10.2						2.8

Time: 60.0°W.
Sweep: 1.2 Mc to 18.0 Mc, manual operation.

Table 14

Palmyra I. (5.9°N, 162.1°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	250	13.2					2.0	3.3
01	240	(12.9)						(3.1)
02	230	(10.0)					1.5	(3.1)
03	230	8.4					2.1	3.1
04	235	8.8					2.7	3.1
05	240	5.0					3.3	3.0
06	290	5.0					3.1	2.7
07	265	8.0			130	2.7	4.0	2.8
08	245	10.3			120	3.2	4.3	2.6
09	260	11.3	230		120	3.7	4.3	2.4
10	270	11.7	220		120	4.0		2.4
11	270	12.3	220		120	4.1	4.2	2.4
12	280	12.6	220		120	4.3		2.3
13	280	13.1	220		120	4.3		2.3
14	270	13.6	230		120	4.1		2.4
15	270	13.9	230		120	3.9	4.3	2.5
16	250	13.8	230		120	3.5	4.3	2.6
17	250	13.3			120	2.9	4.3	2.4
18	280	13.0			120	2.1	3.7	2.3
19	340	12.3					3.2	2.2
20	365	12.0						(2.2)
21	300	12.8					1.9	2.4
22	270	(13.3)					2.1	(2.6)
23	250	(13.5)					2.1	(2.8)

Time: 157.5°W.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 36 seconds, automatic operation; 13.0 Mc to 18.0 Mc, manual operation.

Table 15

Huancayo, Peru (12.0°S, 75.3°W) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	240	8.7						2.8
01	240	7.9						2.9
02	250	7.1						3.0
03	260	6.6						2.9
04	260	6.2						2.9
05	260	4.9						3.0
06	280	7.0				1.9		2.9
07	250	10.0				2.8		2.9
08	240	12.0				3.4	10.7	2.7
09	240	12.8	230	5.4		3.9	11.9	2.5
10	230	12.8	220	5.5		4.2	12.2	2.2
11	255	12.0	220	5.4		4.2	12.3	2.2
12	220	11.6	220	5.3		4.1	12.2	2.2
13	220	11.5				4.2	12.4	2.1
14	220	11.4	210	5.5		3.9	12.0	2.2
15	230	11.4				3.5	12.0	2.1
16	240	11.3				3.2	11.7	2.1
17	270	11.0				2.5	8.4	2.1
18	320	10.8				1.3		2.1
19	430	9.1						2.1
20	420	9.0						2.2
21	300	9.0						2.4
22	260	9.3						2.7
23	240	9.1						2.8

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes, automatic operation.

Table 16

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) September 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	(260)	5.0						2.8
01	(260)	4.4						2.9
02	(250)	4.1						2.9
03	(250)	3.9						2.8
04	(270)	3.8						2.8
05	(280)	4.0						2.8
06	270	5.8				1.8		2.9
07	230	8.8			110	2.8		3.3
08	250	10.2	230		110	3.1		3.2
09	260	11.0	220	5.0	100	3.5		3.1
10	285	11.4	210	(5.0)	100	3.7		3.0
11	270	12.0	210	5.0	110	3.8		2.9
12	280	12.0	210	5.0	100	3.9		2.8
13	280	12.0	210	5.0	110	3.9	4.0	2.8
14	280	11.9	210		110	3.8	3.9	2.7
15	(295)	11.5	220	4.5	110	3.6	3.8	2.8
16	(270)	11.6	230		110	3.1	3.4	2.8
17	240	11.5			110	2.6	2.8	2.8
18	240	11.2				1.8		2.9
19	230	10.4						3.0
20	230	9.1						3.0
21	230	7.8						3.0
22	240	6.8						3.0
23	(250)	5.4						2.9

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 17

Peiping, China (39.9°N, 116.4°E) August 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02		8.2						
03		8.1						
04		8.0						
05		8.1						
06		8.8						
07		9.5						
08								
09								
10		11.3						
11		11.3						
12		11.5						
13		11.6						
14		11.4						
15		11.5						
16								
17								
18		10.4						
19		9.6						
20		8.6						
21		8.6						
22		8.4						
23		8.2						

Time: 120.0°E.
Sweep: 2.3 Mc to 14.5 Mc in 15 minutes, manual operation.

Table 18

Chungking, China (29.4°N, 106.8°E) August 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	320	8.8					4.1	2.6
01	300	8.6					3.8	2.5
02	280	8.5					3.6	2.6
03	260	7.4					3.6	2.6
04	280	6.6					3.0	2.6
05	280	8.0					3.5	2.6
06	280	7.6			120	2.0	4.2	2.8
07	260	8.9	240		100	2.8	4.7	3.0
08	270	9.4	240		120	3.3	5.0	2.9
09	280	9.8	240	5.1	115	3.6	5.7	2.8
10	335	10.0	230	6.1	105	3.9	5.8	2.6
11	340	10.7	230	5.8	105	4.2	5.9	2.5
12	375	12.0	230	6.2	120	4.1	5.3	2.4
13	380	12.5	230	5.8	120	4.1	5.2	2.5
14	360	13.0	240	5.9	120	4.1	4.8	2.6
15	360	14.0	240	5.3	120	3.8	5.0	2.6
16	340	13.8	240	5.2	120	3.4	4.3	2.6
17	300	13.3	240	4.6	120	3.0	4.3	2.6
18	290	12.2	270		120	2.5	3.7	2.7
19	270	11.8					3.6	2.7
20	290	11.5					3.1	2.6
21	290	10.0					3.4	2.5
22	300	9.6					3.6	2.5
23	300	9.2					4.0	2.5

Time: 105.0°E.
Sweep: 1.7 Mc to 20.0 Mc in 15 minutes, manual operation.

Table 19

Leyte, Philippine Is. (11.0°N, 125.0°E) August 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		9.6					2.6	2.9
01		8.9					1.8	3.0
02		3.2						3.0
03		7.3					1.8	3.2
04		6.2					3.2	3.2
05		4.8					3.4	3.0
06		7.6				2.5	4.2	2.9
07		9.6				3.6	4.9	2.8
08		10.4				3.9	5.0	2.6
09		10.7				4.2	5.0	2.3
10		11.0				4.5	6.2	2.3
11		11.2				4.7	5.2	2.3
12		11.5				4.7	5.5	2.2
13		11.6				4.5	5.0	2.1
14		11.8				4.4	5.0	2.2
15		12.2				4.0	4.8	2.2
16		12.0				3.6	4.9	2.3
17		12.0				2.8	4.8	2.2
18		11.1					3.0	2.3
19		10.1					2.2	2.1
20		10.4						2.3
21		10.1					1.8	2.4
22		10.1					2.7	2.6
23		10.1					2.6	2.7

Time: 120.0°E.
Sweep: 1.6 Mc to 16.0 Mc, manual operation.

Table 20

Palmyra I. (5.9°N, 162.1°W) August 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	250	12.0						3.1
01	250	(11.2)						(2.9)
02	250	(10.4)						(2.9)
03	250	(9.8)						(3.0)
04	240	(8.4)					1.7	(3.1)
05	240	6.0					1.8	3.0
06	270	5.4					1.9	2.8
07	270	7.5			120	2.6	3.6	2.8
08	240	9.0			120	3.4	4.3	2.7
09	250	9.8	230		120	3.7		2.4
10	250	10.2	220		120	4.0		2.3
11	270	10.7	220		120	4.3		2.3
12	290	11.3	220		120	4.3		(2.3)
13	280	11.6	220		120	4.3		2.3
14	270	12.3	220		120	4.2		2.3
15	260	12.5	220		120	3.9		2.3
16	250	12.[illegible]	230		120	3.5	4.3	2.3
17	240	12.0			120	3.0	4.3	2.3
18	280	(11.7)			120	(2.2)	4.3	(2.2)
19	330	(10.4)					3.6	(2.2)
20	370	(9.4)					2.0	(2.2)
21	350	(10.4)						(2.4)
22	300	(11.2)					1.7	(2.6)
23	280	(12.6)					1.6	(2.7)

Time: 157.5°W.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 36 seconds, automatic operation; 13.0 Mc to 18.0 Mc, manual operation.

Table 21

Watheroo, W. Australia (30.3°S, 115.9°E) August 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	4.6					3.0	2.7
01	265	4.6					3.2	2.8
02	268	4.0					3.2	2.8
03	255	4.0					3.1	2.9
04	260	3.6					3.2	2.7
05	278	3.6					3.2	2.7
06	268	3.7					3.1	2.8
07	245	6.5				1.9	3.1	3.2
08	250	9.0				2.7	3.2	3.2
09	245	9.8	240			3.1	3.2	3.1
10	270	10.5	235	5.0		3.4	3.3	3.0
11	275	10.9	235	5.0		3.6	3.8	3.0
12	280	10.8	225	5.0		3.7	3.8	2.9
13	300	10.8	230	5.3		3.6	3.9	2.8
14	280	10.8	230	4.9		3.6	3.7	2.8
15	270	10.5	238	4.6		3.3	3.6	2.8
16	250	10.2				2.9	3.2	2.9
17	248	10.0				2.3	3.2	2.9
18	235	9.2					3.1	3.0
19	220	7.6					3.0	3.0
20	240	6.1					3.0	3.0
21	245	5.6					3.1	2.9
22	250	5.4					3.1	2.9
23	258	5.0					3.1	2.8

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes, automatic operation.

Table 22

Lanchow, China (36.1°N, 103.8°E) July 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	390	9.4					4.2	2.2
01	395	8.8					4.0	2.2
02	390	8.4					3.8	2.2
03	390	8.2					3.7	2.2
04	390	7.8					3.4	2.2
05	370	7.4					3.2	2.2
06	330	8.4					3.7	2.4
07	320	9.4	310		150	3.2	4.4	2.4
08	360	10.0	300		140	3.6	5.1	2.3
09	420	10.5	310	6.6	140	3.8	5.8	2.2
10	480	10.5	310	6.2			6.1	2.2
11	510	11.0	320	6.4			5.8	2.2
12	500	(10.8)	320	6.4			5.0	2.2
13	480	11.5	310	6.2			5.0	2.1
14	470	11.6	320	6.2			5.2	2.2
15	465	11.5	300	6.0			5.2	2.2
16	445	11.0	290	5.8			5.0	2.2
17	440	11.0	320		145	3.4	5.0	2.3
18	395	11.0	320		150	3.0	4.6	2.3
19	360	10.5					4.4	2.2
20	360	10.2					4.4	2.2
21	(360)	(9.2)					(4.6)	(2.3)
22	390	9.8					4.5	2.2
23	400	9.0					4.0	2.2

Time: 105.0°E.
Sweep: 2.4 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 23

Nanking, China (32.1°N, 119.0°E) July 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04	280	7.4					3.6	2.7
05	280	7.6					2.9	2.7
06	280	8.2	260		120	2.5	3.5	2.7
07	270	8.7	240		120	3.1	4.4	2.8
08	280	8.8	240	5.4	120	3.5	6.0	2.7
09	320	8.8	230	5.8	120	3.8	6.9	2.6
10	390	9.4	220	6.0	120	4.0	8.3	2.4
11	400	10.1	240	6.0			7.7	2.5
12	400	10.7	240	6.0	120	4.4	7.0	2.5
13	400	11.0	220	6.0			6.4	2.5
14	390	11.0	235	5.8	110	4.2	6.0	2.5
15	360	11.2	235	5.6	120	4.0	5.6	2.5
16	340	11.0	240	5.4	120	4.0	5.2	2.5
17	320	10.7	240	5.0	120	3.1	4.6	2.6
18	295	10.1	240		120	2.9	5.2	2.7
19	280	9.3					4.5	2.7
20	260	8.7					4.0	2.5
21	300	8.8					4.4	2.5
22								
23								

Time: 120.0°E.
Sweep: 1.7 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 24

Brisbane, Australia (27.5°S, 153.0°E) July 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	265	4.6					2.9	2.8
01	270	4.7					2.8	2.8
02	255	4.7					3.1	2.8
03	255	4.6					2.9	2.9
04	265	4.3					2.6	2.8
05	260	4.0					2.8	2.8
06	250	4.4					2.3	2.9
07	240	7.3			145	2.1	1.8	3.4
08	240	9.5			110	2.8	1.8	3.4
09	240	10.8	230		105	3.3		3.3
10	250	10.8	230		110	3.6	2.8	3.2
11	250	10.2	220	4.9	110	3.7		3.2
12	250	10.0	210	5.0	110	3.7		3.1
13	250	10.0	210	5.2	110	3.6	3.0	3.0
14	250	9.8	220	5.4	120	3.5	3.0	3.0
15	240	9.8	225		120	3.3	3.0	3.0
18	240	9.2			120	2.8	3.0	3.1
17	240	8.7				2.1	3.0	3.1
18	230	7.8					2.8	3.0
19	230	6.8					2.0	3.0
20	250	5.9					2.8	3.0
21	250	5.6					2.0	2.9
22	250	5.3					2.0	2.9
23	250	4.7					2.8	2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 25

Capetown, Union of S. Africa (34.2°S, 18.3°E) July 1948*

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	(280)	2.5					3.6	2.8
01	285	2.7					3.5	2.8
02	(280)	2.8					3.4	2.9
03	260	3.0						3.0
04	270	2.8					2.8	2.9
05	250	2.7					2.0	2.9
06	260	2.7					3.6	3.0
07	255	2.8						3.0
08	240	6.1				2.0		3.2
09	230	8.3			120	2.8		3.3
10	250	9.0	230		110	3.2		3.1
11	260	9.8	230		110	3.4		3.1
12	270	10.6	220		110	3.6		2.9
13	270	11.1	230		110	3.6	3.1	2.9
14	275	11.0	220		110	3.5	3.7	2.9
15	280	11.0	220		110	3.4	3.6	2.9
16	270	11.0	235		110	3.1	3.1	2.9
17	240	10.8			115	2.6	2.6	3.0
18	220	9.1				1.8	1.9	3.1
19	220	6.8					1.7	3.1
20	220	5.5					1.4	3.2
21	230	3.4					1.8	3.2
22	250	2.6					3.3	3.1
23	280	2.4					3.2	3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.
*Data taken July 15 through 31, only.

Table 26

Canberra, Australia (35.3°S, 149.0°E) July 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270	4.3					2.8	2.8
01	280	4.4					3.5	2.7
02	280	4.3					3.4	2.7
03	275	4.4					3.6	2.7
04	255	4.5					3.5	2.8
05	250	4.2					3.2	2.9
06	250	3.9					2.8	2.9
07	240	5.4				1.6	2.7	3.0
08	230	8.3			100	2.5	3.4	3.2
09	240	10.0			100	3.0	3.5	3.2
10	230	10.5			100	3.4	3.4	3.1
11	230	10.9			100	3.5	4.0	3.0
12	230	10.9			100	3.5	4.9	3.0
13	230	11.0			100	3.5	5.4	3.0
14	220	10.8			100	3.4	4.4	3.0
15	225	10.5			100	3.1	4.0	2.9
16	235	9.8			100	2.7	3.9	2.9
17	240	9.5			120	1.9	3.5	3.0
18	228	8.2					3.5	3.0
19	230	7.1					3.5	3.0
20	240	6.0					3.3	3.0
21	250	5.4					2.8	2.9
22	250	4.7					2.6	2.8
23	260	4.5					2.6	2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 27

Hobart, Tasmania (42.8°S, 147.4°E) July 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	285	3.5					2.8	2.6
01	285	3.6					3.5	2.6
02	290	3.8					3.5	2.6
03	285	4.0					3.0	2.7
04	260	3.8					3.0	2.8
05	250	3.8					2.6	2.8
06	250	3.4					3.2	2.8
07	250	3.5					2.7	2.9
08	240	7.0				2.1	2.7	3.4
09	240	8.8			125	2.5	3.8	3.5
10	238	10.0			128	3.0	4.0	3.4
11	232	(10.3)			120	3.2	4.2	(3.4)
12	245	(10.5)			125	3.2	4.0	(3.2)
13	240	(10.5)			120	3.2	4.0	(3.2)
14	240	10.5			125	3.0	4.0	(3.1)
15	238	10.5			125	2.9	4.0	3.2
16	240	10.2			120	2.4	3.5	3.1
17	230	9.5					3.0	3.2
18	238	8.3					2.5	3.3
19	235	6.9					2.7	3.2
20	240	5.8					2.8	3.1
21	248	5.0					2.4	2.9
22	250	4.1					2.6	2.9
23	257	3.7					2.6	2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 28

Delhi, India (28.6°N, 77.1°E) June 1948

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	** F2-M3000
00	540	9.2						2.2
01	(530)	8.7						
02	520	9.1						
03								
04	480	8.1						2.3
05	420	8.2						
06	440	8.7						
07	440	9.4						
08	480	9.6						2.3
09	520	10.3						
10	510	10.9						
11	560	11.2						
12	560	12.0						
13	540	12.4						2.1
14	520	(12.5)						
15	520	(12.6)						
16	500	12.4						
17	480	12.0						
18								
19								
20	480	9.4						2.3
21	520	9.1						
22	520	9.0						
23	520	9.0						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 f°F2.
**Average values; other columns, median values.

Table 29

Bombay, India (19.0°N, 73.0°E) June 1948

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000 **
00	(450)	(8.9)						2.4
01	(450)	(8.0)						
02	(420)	(6.3)						
03	(420)	(5.3)						
04	(420)	(5.7)						2.6
05	390	(5.8)						
06	360	(7.4)						
07	330	9.4						
08	420	10.1						2.7
09	510	10.4						
10	540	11.5						
11	570	11.8						
12	570	12.7						2.2
13	570	13.2						
14	540	13.4						
15	480	13.7						
16	480	14.0						2.4
17	480	13.9						
18	480	13.8						
19	480	12.8						
20	510	11.8						2.4
21	510	10.6						
22	525	9.8						
23	510	(9.8)						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 f°F2.
**Average values; other columns, median values.

Table 30

Madras, India (13.0°N, 80.2°E) June 1948

Time	*	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000 **
00								
01								
02								
03								
04								
05								
06								
07	450	9.8						
08	480	10.7						2.5
09	540	10.9						
10	600	11.2						
11	600	10.9						
12	600	11.0						2.1
13	600	11.2						
14	600	11.2						
15	600	11.6						
16	600	12.0						2.1
17	600	12.2						
18	600	12.2						
19	600	11.9						
20	600	(10.8)						2.1
21	585	(10.7)						
22		(10.2)						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 f°F2.
**Average values; other columns, median values.

Table 31

Hobart, Tasmania (42.8°S, 147.4°E) June 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	275	3.8					2.6	2.8
01	290	3.8					2.4	2.7
02	290	3.8					2.6	2.7
03	290	3.9					2.6	2.7
04	275	4.0					2.5	2.8
05	250	4.0					2.5	3.0
06	245	3.7					3.0	2.8
07	250	3.8					2.6	3.1
08	238	7.0			120	(2.1)	2.6	3.6
09	235	9.5			110		2.5	3.6
10	235	10.3			110	3.0	3.0	3.6
11	238	10.5			110	3.2	2.6	(3.4)
12	240	10.5	222	4.2	110	3.3	3.5	(3.3)
13	240		220		110	3.2	3.4	
14	240	(10.4)	235		120	3.0	2.9	(3.2)
15	235	(10.5)			105	2.6	2.7	(3.3)
16	230	(10.5)			120	2.2	2.5	3.2
17	230	10.0					2.5	3.4
18	235	9.0					2.4	3.4
19	240	7.1					2.5	3.3
20	240	5.8					2.1	3.2
21	245	4.8					2.0	3.2
22	255	4.0					2.3	2.8
23	255	3.8					2.5	2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 32

Fribourg, Germany (48.1°N, 7.8°E) March 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	(300)	5.6					2.1	2.5
01	(300)	5.5					1.9	2.6
02	(290)	5.2					1.8	2.6
03	(300)	5.1					2.0	2.6
04	280	4.8					2.1	2.7
05	260	4.1						2.7
06	250	5.0				1.7		3.0
07	240	7.0			120	2.2		3.2
08	240	8.2	230		110	2.7		(3.2)
09	240	9.5	215	3.8	110	3.0		(3.0)
10	245	10.6	210	4.7	105	3.3	3.7	3.0
11	260	11.0	210	4.6	105	3.4		3.0
12	260	11.0	210	(4.7)	105	3.5	4.1	3.0
13	268	11.2	220	4.7	105	3.5		2.9
14	260	11.0	230	4.8	105	3.4		2.9
15	250	10.8	230		105	3.2		2.9
16	240	10.6	230		110	2.9		(3.0)
17	240	10.2			115	2.3	3.1	(3.0)
18	240	(9.6)			130	1.8	2.7	(3.1)
19	230	(8.4)					2.0	(3.2)
20	235	(7.2)						(3.0)
21	250	(6.5)						(2.9)
22	270	5.9						2.7
23	285	5.8						2.7

Time: Local.
Sweep: 1.6 Mc to 17.6 Mc in 10 minutes, automatic operation.

Table 33

Bagneux, France (48.8°N, 2.3°E) February 1948

Time	h'F2	f°F2*	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	320	4.2						
07	250	6.1						3.1
08	230	9.5						3.2
09	230	10.5						3.2
10	240	11.6	230					3.1
11	230	12.1	220					(3.1)
12	230	11.8	210					
13	230	11.3						(3.2)
14	230	10.8						3.1
15	225	10.5	220					3.2
16	220	10.3						3.2
17	220	9.5						(3.3)
18	240	8.2						
19	250	6.1						(2.9)
20	265	5.8						(3.0)
21	305	5.5						3.0
22	310	5.1						3.0
23								

Time: 0.0°.
Sweep: Feb. 1 through 10: 4.0 Mc to 11.2 Mc in 12 minutes; Feb. 11 through 29: 3.9 Mc to 6.8 Mc and 7.8 Mc to 13.5 Mc in 12 minutes.
*Medians in this column were obtained from observed values of f°F2 and values derived from f^xF2.

Table 34

Fribourg, Germany (48.1°N, 7.8°E) February 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	310	4.2					1.9	
01	(310)	4.2					2.0	
02	(320)	4.2					2.6	
03	(310)	4.0					1.8	
04	(290)	3.7					2.3	
05	280	3.2						
06	280	3.2						
07	250	5.1				E	2.1	
08	232	(8.4)			120	2.1		
09	230	10.1	230		110	2.6	3.2	
10	230	(11.0)	230		110	3.0		
11	240	(11.2)	225		110	3.1		
12	232	(11.4)	222		110	3.2	3.4	
13	230	11.2	225		110	3.2	3.4	
14	230	(10.8)	230		110	3.1		
15	240	40.4	230		110	2.9	3.1	
16	235	(10.1)			110	2.5	3.2	
17	230	(8.8)			130	1.9		
18	225	(7.9)						
19	230	6.2						
20	(240)	5.4						
21	(255)	(5.0)						
22	(290)	4.4						
23	(300)	4.4						

Time: Local.
Sweep: 1.6 Mc to 17.6 Mc in 10 minutes, automatic operation.

Table 35

Bagneux, France (48.8°N, 2.3°E) January 1948

Time	h'F2	f°F2*	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06								
07	290	4.5						(3.0)
08	250	8.3	220					3.3
09	240	D	215					(3.2)
10	220	D	230					
11	220	D						
12	230	D	210					
13	245	D						
14	230	D	220					
15	230	D	220					(3.2)
16	250	9.3						3.2
17	250	8.0	225					3.4
18	260	5.9						(3.1)
19	280	5.1						3.1
20	305	4.1						3.0
21	(390)	3.9						(2.8)
22	(440)	3.6						
23								

Time: 0.0°.
Sweep: 4.0 Mc to 11.2 Mc in 12 minutes.
*Medians in this column were obtained from observed values of f°F2 and values derived from f^xF2.

Table 36

Fribourg, Germany (48.1°N, 7.8°E) January 1948

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	330	3.7						
01	(350)	3.6						
02	340	3.6						
03	360	3.5						
04	315	3.3						
05	300	3.3						
06	295	3.1						
07	260	3.6						
08	230	7.0				E		
09	230	(9.6)			130	2.5		
10	230	10.6			130	2.8	3.1	
11	240	(11.1)			125	3.0		
12	230	(11.0)			120	3.0		
13	240	(10.9)			125	3.0		
14	250	(10.8)			130	2.9		
15	250	10.5			130	2.5		
16	230	(9.2)			135	2.0	2.1	
17	230	8.4				E		
18	240	7.0					2.4	
19	250	5.5						
20	250	4.2						
21	300	3.9						
22	(330)	3.8						
23	310	3.8						

Time: Local.
Sweep: 1.6 Mc to 17.6 Mc in 10 minutes, automatic operation.

Form adopted June 1946

TABLE 37

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), October (Month), 1948

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. J. S., J. M. C.

Calculated by: J. J. S., F. J. Mc., A. G. J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	270	340K	320K	280K	260K	300K	(310)CK	250K	420FK	430FK	350K	340K	300K	260K	270K	260A	230K	240K	230K	210K	260K	250K	300K	280K
2	280K	300K	370FK	350FK	300FK	290K	(270)FK	250FK	250K	400K	370K	340K	310K	280K	270K	240K	250K	250K	240A	230K	230	230	260	280
3	240	280	260	250	250	250	260	230	230	220	240	300	300	280	280	280	240	230	220	230	230	250	250	250
4	250	280	280	290	260	250	240	230	230	210	250	210	250	C	C	250	240	230	220	210	210	250	240	260
5	260	280	260	250	210	240	230	230	230	230	230	220	250	260	270	260	250	220	200	200	210	240	250	250
6	260	250	230	230	230	250	250	230	230	230	230	230	230	260	250	250	230	230	200	210	230	260	250	250
7	250	250	250	250	260	250	250	230	230	240	230	260	270	270	260	240	250	240	220	230	240	[260]A	270	250
8	250	250	260	250	250	250	270	230	240	240	240	250	270	250	250	240	230	230	210	220	(230)A	230	240	250
9	270	270	250	250	240	250	240	230	230	230	250	230	280	250	240	230	240	220	200	230	220	230	250	270
10	280	300K	370K	360K	(330)FK	330K	290K	250K	250K	270K	280K	370K	350K	330K	300K	280K	270K	250K	240K	240K	250K	290K	280K	250K
11	270K	300K	330K	330K	350K	300K	290K	250K	300K	300K	290K	K(320)CS	[310]CK	280K	280K	230K	230K	240	230	220	250	250	240	270
12	270	270	270	260	260	250	250	230	230	250	230	250	280	270	270	230	220F	230	230	210	210	240	250F	250F
13	260	270F	250	250F	270F	250	270	230	230	230	220	230	250	250	250	230	250	230	250	210	210	230	250	260F
14	260	250	250	250	230	260	260	240	230	250	230F	240	220	240	240	230	230K	250K	260K	290K	280K	310K	280K	310FK
15	300FK	280FK	250FK	300FK	310FK	280F	280F	240	230	220	230	250	230	240	240	230	230	240	210	220	220	230	250	250
16	280F	280F	250	250	230	230	250	230	230	210	220	250	230	270	230	230	230	220	220	230	220	250	250	[240]C
17	230	250	250	250	300	260	240	230	220	220	200	260	280	230	220	220	230	220K	300K	480FK	[500]FK	430K	330K	260K
18	300FK	380FK	400K	360K	340K	300K	270K	250K	230K	270K	310K	260K	310K	320K	300K	270K	250K	250K	250K	270K	[330]FK	370FK	320K	FK
19	FK	FK	400FK	360FK	310K	380FK	360K	GK	630K	510FK	650K	GK	580K	520K	450K	440K	330K	250K	(240)CK	250K	270K	280K	280K	280K
20	280	260	250	280	260	270	280	240	220	230	250	270	280	260	270	250	240	220	210	230	230	250K	270K	250K
21	300FK	(400)FK	(370)FK	(330)FK	(280)FK	270FK	280FK	250K	250K	260K	240	250	(230)C	280	270	240	240	220	210	230	250	250	250	250
22	(270)A	250F	250	250F	250	250	250	230	220	210	260	230	220	240	270	270	240	230	200	200	230	230	260	280
23	280	250	270	260	240	210	220	240	220	230	240	230	260	260	230	220	220	210	200	220	230	220	230	250
24	250	260	250	250	220	240	220	220	220	250	250	260	250	250	230	240	230	220	220	210	210	230	220	240
25	250	250	260	260	250	220	[220]A	230	230	210	240	250	260	230	230	(250)C	(230)C	210	220	240	230	240	250	250
26	270	270	250	250	300F	260	260	250	220F	240	260	250	250	230	230	230	220	230	230	240	240	250	250	250
27	250	250	250	250	250	260	280	230	230	230	230	250	240	250	250	240	230	230	210	220	220	220F	240	270
28	260	250	260	250	240	250	250	240	230	240	230	240	230	230	240	230	230	210	210	210	210	240	250	260
29	250	250	250	250	250F	240	230	230	230	240	240	220	230	240	240	240	230	220	210	210	220	240	230	230
30	240	270	290	260	250	230	230F	230	230	230A	240	230	230	230	230	230	220	210	250	220	230	240	250	260
31	270	280	270	270	250	240	250	250	230	250	250K	250K	280K	250K	250K	250K	240K	230K	220K	230K	230K	240K	240K	230K
Median	270	270	260	250	250	250	250	230	230	240	240	250	260	255	250	240	230	230	220	220	230	240	250	250
Count	30	30	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 38

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), October (Month), 1948

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. J. S., J. M. C.

Calculated by: J. J. S., F. J. Mc, A. G. J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.7F	4.2FK	47FK	5.1K	(45)SK	(31)FK	(3.7)FK	47FK	5.3FK	5.6K	5.1K	71K	80K	8.5K	84K	8.7K	(9.4)PK	(95)PK	(8.9)PK	7.6K	6.1K	5.7K	5.2K	5.0K
2	4.8K	3.9FK	(3.2)FK	(33)FK	(38)FK	(35)FK	39FK	5.0FK	5.7FK	58FK	(65)JK	7.5K	82K	83FK	85K	82K	8.2K	85K	7.6K	7.2K	(6.7)JC	5.3	4.9	4.9F
3	49F	4.9F	47F	45F	3.9F	35F	41F	6.4	7.5	8.4	9.4	(98)P	(10.3)CP	108	(103)JP	(103)P	(10.6)P	(9.8)SP	(90)P	8.4	7.0	(6.5)J	(6.2)J	5.6
4	5.3	47F	4.2F	4.2F	4.3	(4.2)F	5.5F	86	95	11.2	(11.2)P	(115)SP	11.7	C	C	(112)CP	(108)C	(94)CP	(94)CP	89	7.4	70	6.8	(6.4)J
5	(61)J	(61)J	(60)J	(59)J	5.5	5.2	5.5	84	(10.5)CP	(112)S	11.3	11.8	(124)CP	P(11.6)SJ	11.7	(12.4)SP	(116)SP	(104)SP	(94)SP	8.1	7.1	6.4	(5.9)FS	5.9
6	(6.1)JS	(5.9)JS	(54)J	49	(41)FS	39F	49	79	(96)SP	(98)CP	106	11.0	107	11.5	P(11.3)SC	113	P(11.5)SC	[105]SC	P(9.5)SC	8.4	(7.3)S	(6.3)JF	(6.1)JS	(6.1)JS
7	60	5.7	5.2F	49	43S	(41)S	C(47)JS	(75)SC	(9.0)SC	(98)SC	(9.8)SC	105	10.5	10.7	(11.0)S	(105)P	(95)P	(95)P	(90)S	8.6	7.6	6.6	6.8	6.4
8	(5.3)P	5.3	(5.5)P	5.2	48	42	4.9	76	(96)P	(11.0)P	(11.0)P	110	110	(110)S	P(11.0)SC	P(112)SC	P(106)SC	P(98)SC	P(9.3)SC	8.2	6.8	(61)JS	5.7	5.5
9	5.6	(5.5)JS	5.3	(53)S	50	45	5.1	8.1	89	(98)S	(100)SP	11.2	(112)S	11.3	(11.4)S	P(115)SC	P(115)SC	P(108)SC	(8.9)CP	8.1	7.3	(61)J	(5.8)P	(5.5)S
10	5.4	(53)SK	K(28)FC	(38)FK	(2.7)FK	(3.0)FK	(41)FK	K(5.4)SC	58K	(63)SK	68K	7.7K	8.4K	8.7K	8.8K	88K	8.6K	K(86)FS	K(7.8)FS	7.2K	6.7K	5.8K	(5.7)SK	5.5K
11	(4.5)FK	K[42]FS	K(39)FS	(3.2)FK	(35)FK	(35)FK	4.1K	54K	CK(66)JS	72K	7.9K	(8.5)CK	[89]CK	(9.3)CK	92K	92K	92K	93	8.7	7.3	(69)J	(6.5)JF	(5.8)P	5.5
12	5.3	[illegible]	5.1	(49)F	S(43)JF	(41)F	(48)F	7.1	93	(95)P	102	11.1	112	114	115	11.4	105	(9.6)SP	(96)SP	8.5	7.5	6.6	(6.3)JF	5.9F
13	5.7F	(55)F	5.7F	51F	46F	45F	52F	84FS	98	111	115	116	118	118	12.0	(11.5)JS	(11.4)S	(10.7)S	(10.6)S	89	(66)JS	(70)JS	(6.5)JS	(6.5)JS
14	(65)FS	(6.1)JS	(5.5)F	(5.5)S	(5.5)FS	(4.3)FS	48F	(8.2)S	(98)SP	116	11.8	(113)S	(11.8)SP	(119)SP	(121)SP	(119)SP	108K	PK(93)SC	9.0K	(88)SK	K[7.4]SC	(6.0)CK	S CK	F K
15	(31)K	(3.0)FK	(31)FK	(33)FK	(33)FK	(37)F	45F	7.0S	89	105	(113)S	118	125	122	120	11.7	(107)SP	[108]S	(98)SC	(9.0)S	8.6	7.3	6.5	(5.7)F
16	(5.4)FS	(5.1)FS	P(56)FS	P(49)FS	(40)FS	31F	3.4F	82	(98)SP	(117)S	(120)P	128	124	123	11.7	(120)SP	(118)S	11.3	(10.3)SP	(9.4)S	8.6F	7.8	(75)S	[6.9]C
17	63F	S(5.9)JF	(59)F	(5.1)F	(47)F	(47)F	(55)FS	(88)F	(98)SP	(107)SP	11.7	127	(127)SP	121	P(125)SC	P(122)SC	P(11.8)SC	114K	(80)JK	(43)FK	[38]FK	(3.3)FK	(3.7)FK	38FK
18	32FK	(26)FK	27FK	2.8FK	24FK	30FK	37FK	K(57)FS	70K	83K	89K	92K	K(98)SP	(100)PK	102K	97K	89K	90K	7.5K	47K	[37]FK	2.7FK	2.9FK	[1.8]FK
19	[2.5]FK	[24]FK	23FK	2.5FK	[20]FK	28FK	33FK	(41)K	F K	(50)FK	(49)FK	45GK	5.4K	5.7K	57K	58K	63K	60K	(5.4)CK	49K	4.6K	4.6K	47FK	4.7K
20	4.7F	46F	41F	3.7	3.5F	3.1F	35	65	83	(72)SP	(99)SP	(107)SP	(11.5)SP	(11.6)SP	118	C(11.5)SP	(11.0)SC	(98)SC	(9.4)SC	8.8	(7.8)JS	7.1K	(7.5)JS	7.0K
21	4.7FK	F K	F K	(25)FK	(37)FK	(36)FK	(39)FK	52FK	64K	(78)SK	73	103	(104)C	108	11.3	(11.6)S	(128)C	127	(105)S	70	6.7	6.3	(5.9)S	5.7
22	4.9F	4.7F	4.2F	31F	29F	28F	3.1F	63	8.5	(95)S	110	11.7	(126)S	11.7	11.6	118	11.6	(11.4)SP	P(98)SC	78	(63)JS	5.3F	4.8	(4.5)FS
23	(3.8)FS	(3.2)F	(29)FS	(2.8)F	S(45)JF	(27)F	(29)F	7.3F	78	10.1	11.7	128	(128)SP	132	138	(125)SP	11.8	11.0	(9.8)SP	(94)SP	90	7.3	F(6.6)JS	(5.9)JF
24	4.9F	5.2F	[40]SF	(29)F	(29)F	28F	30F	69F	(87)F	(100)SP	11.5	120	125	13.2	(130)SP	(128)SC	P(127)SC	P(123)SC	(11.0)S	P(9.7)SC	7.9	7.7	6.7	(6.1)JS
25	5.7	5.3	5.3	(50)FS	46F	45F	(41)FS	7.1	96	110	110	113	(126)SP	130	133	(120)C	(126)SC	113	9.6	9.0	87	7.8	(7.4)JS	(73)S
26	6.8F	68F	63F	5.3F	47F	50F	49F	5.7F	7.2	84	9.4	102	116	11.6	P(11.5)SC	(124)	11.0	(9.7)S	(9.6)P	9.7	7.4	(7.0)J	(68)J	(6.5)J
27	68	62	57	48F	3.6F	30F	33F	56F	7.4F	8.3F	87F	103	109	108	108	11.1	108	P(96)SC	P(94)SC	P(9.3)SC	F(80)JS	(6.4)FS	5.4	5.0
28	51	49F	(44)F	3.4F	[illegible]	3.5F	(37)F	(68)JS	8.6	100	10.7	120	12.0	128	(11.4)S	116	11.0	9.4	86	7.9	6.4	5.7	53	5.0F
29	4.9F	4.9F	47F	(47)F	(42)FS	(38)FS	(35)F	(61)F	8.8	103	11.4	108	12.0	11.7	11.8	(11.6)J	107	P(98)SC	(90)SP	8.1	(7.3)FS	6.5F	6.3F	5.4F
30	49F	43F	(4.2)F	45F	44F	S(4.1)JF	(3.7)FS	68	7.4	107	11.5	118	122	(11.7)S	115	113	110	(98)SP	85F	7.9	(71)S	(8.5)FS	57F	53F
31	5.2F	5.2FS	51F	5.0FS	49F	(41)F	3.8F	63	79	93	96K	96K	9.7K	9.7K	(98)SK	(98)SK	(95)SK	9.1K	7.4K	63K	K57FS	5.3FK	K(5.1)FS	43FK
Median	53	5.2	47	47	42	37	41	68	88	98	10.6	110	11.5	11.6	114	(115)	(109)	(98)	(93)	82	7.1	64	(59)	5.6
Count	31	30	30	31	31	31	31	31	30	31	31	31	31	30	30	31	31	31	31	31	31	31	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 39

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

f°F2 (Characteristic) . Mc (Unit) October (Month), 1948

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. J. S., J. M. C.

Calculated by: J. J. S., F. J. Mc., A. G. J.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	V(4.8)JF	VK(4.1)JF	VK(4.7)JF	5.0K	K(3.7)JF	3.1FK	K(4.7)JF	5.0FK	5.3K	5.6K	(6.7)JK	(7.4)FK	8.4K	8.0K	8.6K	8.9K	9.4K	K(9.3)CP	8.4K	(6.6)JK	5.7K	5.3K	5.3K	5.0K
2	K(4.6)JF	[4.2]CK	3.7FK	(2.9)FK	(3.5)FK	3.3FK	4.1FK	5.4K	5.6K	6.3K	7.0K	7.8K	8.4K	8.3FK	8.3K	8.6K	8.6K	8.0K	7.5K	7.0K	(5.8)CP	5.0	4.9	4.9F
3	(4.9)JF	4.9F	4.6F	(4.3)JF	3.7	3.2	(5.7)P	7.4	8.0	8.8	9.4	(9.9)P	10.8	(10.7)J	(10.4)P	10.2	(10.0)SP	[9.4]CP	(8.5)CP	7.6	(6.6)J	(6.3)J	5.7	5.6
4	5.0	4.1F	4.1F	4.2F	(4.5)JF	4.4FV	7.0P	9.5	(9.8)CP	(11.3)C	(10.8)P	(11.8)CP	C	C	C	(11.0)CP	(10.0)CP	(9.3)CP	(9.3)CP	8.0	7.0	6.9	(6.4)J	(6.3)J
5	(6.0)J	(6.0)J	(6.1)J	(5.9)J	5.5	4.7	6.7	(9.4)CP	10.9	(11.6)SP	(11.2)S	(12.0)CP	(11.5)SP	P11.5JS	(11.7)SP	11.7	(10.6)SP	[9.6]C	8.7	(7.0)J	[illegible]	6.2	5.9	(6.0)J
6	(5.9)J	(5.7)SP	(5.4)JS	(4.4)JS	3.9	3.8	6.6	9.2	(10.0)SP	10.5	(10.7)SP	11.4	11.3	(11.4)SP	(11.5)SC	P(10.8)SC	[9.9]SC	P(10.0)SC	8.8	(7.7)S	6.8	(6.2)JF	(6.0)J	(5.9)JF
7	(5.9)JF	5.6	5.0	4.6	4.1	(4.0)S	[6.0]SC	8.3	P(9.0)SC	(10.4)SC	(10.2)SC	(10.3)C	10.8	10.7	(10.8)P	[10.1]C	9.4	(10.0)P	9.0	8.3	7.4	6.8	6.6	5.8
8	5.3	(5.4)P	(5.2)P	5.0	(4.5)P	4.8	[6.3]P	9.0	10.8	10.6	(10.8)P	(11.0)P	(11.0)SP	P(11.2)SC	P(11.0)SC	P(10.0)SC	[9.8]SC	P(9.6)SC	(9.0)SC	7.6	6.7	(5.8)JS	5.6	(5.6)S
9	5.6	(5.4)J	(5.3)S	5.2	4.5	4.5	(6.4)JC	8.9	10.2	9.8	(10.8)SC	11.2	11.3	11.2	P(11.5)SC	P(11.3)SC	P(10.8)SC	P(10.6)SC	8.6	(7.7)JS	(6.6)J	6.0	(5.7)SP	5.6
10	(5.4)S	K(5.3)FS	(3.1)FK	K(3.4)FS	(2.9)FK	(3.3)FK	4.9K	5.7K	K(6.2)JS	(6.6)SK	7.4K	8.1K	8.5K	8.8K	8.8K	8.8K	(8.6)SK	(8.4)FK	7.6K	7.0K	5.9K	K(5.6)CP	5.6K	(5.2)FK
11	K(4.2)FS	K(4.1)FS	(3.7)FK	(3.2)FK	(3.7)FK	(3.3)FK	4.7K	5.6K	CK(6.6)JS	7.7K	8.0K	(8.5)CK	[8.9]CK	9.3K	[9.0]CK	9.3K	(9.4)SK	9.0	8.1	(6.9)J	(6.9)J	(6.3)J	(5.5)FC	5.3
12	5.4	(5.2)V	(5.1)F	(4.5)F	(4.3)JF	(4.1)F	(5.9)J	(5.6)S	9.3	(9.7)P	10.6	(11.2)JP	11.4	11.5	11.0	11.0	(10.5)SC	(9.7)SP	(9.3)SP	8.2	6.9	(6.3)F	(6.3)JF	(5.9)F
13	5.7F	(5.5)F	5.4F	5.0F	4.6F	4.4F	6.6F	7.3	(10.4)S	(11.2)C	(11.5)C	[11.6]C	11.8	11.2	(11.7)S	(11.6)SP	[11.2]S	(10.7)J	(9.4)SP	8.5	7.5	(6.7)JS	6.4	(6.5)JS
14	6.3F	(6.0)JF	F(5.5)JS	(5.6)FS	4.8F	4.1F	(6.4)FS	(9.1)SP	10.6	(11.7)S	11.8	11.3	(11.8)SP	11.7	12.2	P(11.2)SC	PK(9.5)SC	(9.5)SK	8.7K	K(8.2)JC	K[6.8]SC	S CK	S CK	(3.1)FK
15	3.2FK	(3.1)FK	2.9FK	3.3FK	3.7FK	3.7F	5.8F	8.3	(9.7)S	10.5	11.3	12.4	12.0	11.5	(12.0)SC	[11.6]S	(11.3)F	[10.3]SC	[9.4]SC	(9.0)SC	(7.9)JS	6.9	(6.2)JS	(5.6)FS
16	4.9F	P(5.5)FS	P(5.4)FS	(4.4)F	3.7F	3.1F	5.9F	(9.4)SP	(10.9)S	(11.8)S	12.5	12.3	12.4	11.9	(11.7)SP	11.5	11.6	(10.8)SP	(9.5)SP	8.8	8.1	7.7	[7.2]C	6.8F
17	(6.0)JF	S(5.9)JF	(5.7)F	4.7F	4.5F	(4.9)FS	F(7.1)JS	(9.8)S	(10.7)S	(10.8)S	12.7	12.7	12.2	P(12.3)SC	P(11.7)SC	P(12.0)SC	(11.3)S	PK(9.8)SC	6.7FK	[4.0]FK	[3.5]FK	3.5FK	3.9FK	3.7FK
18	2.7FK	2.7FK	(2.7)FK	2.8FK	3.0FK	3.1FK	4.9FK	SK(6.8)JF	7.7K	8.3K	9.3K	K9.2SP	K(9.8)SP	K(9.8)SP	K(9.6)SP	K(9.6)SP	K(9.3)SP	8.8K	K(6.1)JS	3.2K	2.0FK	2.6FK	2.0FK	1.9FK
19	2.9FK	[2.4]FK	2.5FK	2.9FK	2.7FK	2.3FK	3.9FK	GK	4.8FK	5.1FK	[5.2]CK	5.2K	5.5K	5.8K	5.7K	K(6.1)JS	6.2K	5.8K	5.3K	4.8K	4.7K	4.6FK	4.7FK	4.7K
20	4.7F	(4.5)FS	S(3.9)JF	3.7F	3.3F	2.9F	4.9	7.4	8.6	(9.5)SP	(10.4)SP	(11.3)F	(11.6)SP	11.5	(11.6)S	(11.2)SC	(10.8)SC	P(9.5)SC	(9.0)SC	8.3	7.5	7.2K	7.1K	6.5K
21	FK	FK	(2.3)FK	(2.5)FK	(3.4)FK	3.8FK	5.0FK	6.7K	7.0K	8.3F	10.4	[10.6]C	(10.7)S	(11.2)S	11.8	(12.6)C	P(12.8)SC	(11.7)S	(8.7)FS	[7.6]S	6.5	6.2	5.7	5.3F
22	4.9F	4.5F	3.3F	3.1F	(2.9)F	(2.7)F	5.0F	(7.9)FS	8.9	10.0	11.8	(12.5)S	(12.3)S	(11.8)S	11.4	11.7	(11.5)S	[10.6]S	9.6	(6.7)FS	5.8	4.9	(4.7)S	4.2F
23	(3.7)FS	(3.1)FS	(2.8)F	3.2F	V(4.4)JS	2.7F	5.0F	(9.0)SP	(9.6)S	11.2	12.5	12.4	13.0	13.6	13.5	(12.0)S	11.8	10.1	9.6	(9.4)SP	(7.6)S	6.5	(6.6)F	(5.8)F
24	5.0	(5.3)F	(3.3)F	(3.0)F	(2.9)F	(2.6)F	5.0F	(7.1)JF	8.1	10.5	11.8	12.6	13.2	12.7	(12.8)SP	12.7	P(12.3)SC	11.5	(10.0)SP	8.9	7.7	(7.1)JS	6.3	5.8
25	5.5	5.4	(5.1)FS	4.9F	4.6F	(4.3)FS	5.5	8.6	(10.6)S	11.0	(10.8)SP	(11.7)S	12.7	[13.2]C	[12.5]C	[12.4]C	[12.1]C	10.6	15	9.2	8.2	(7.7)J	(7.1)S	(6.9)F
26	6.8F	6.8F	(5.9)F	5.0F	(4.9)FS	5.1F	5.2F	(6.6)S	7.6	8.9	9.4	10.6	11.5	11.6	11.4	11.0	[10.2]S	(9.5)J	8.6	7.1	7.2	7.1	6.9	6.8
27	6.2	5.9	(5.4)J	4.6F	3.6F	2.8F	4.4F	7.4	7.8	8.2F	9.2	10.9	11.3	10.6	(11.1)S	10.9	(10.0)SC	P(9.4)SC	P(9.4)SC	[illegible]	7.0	S(6.3)JF	5.3	(5.3)S
28	5.3F	(4.9)FS	(3.9)FS	(3.8)FS	3.6F	(3.3)F	4.7F	(8.0)JS	9.3	10.0	11.5	12.0	(12.0)J	11.4	11.5	11.4	9.8	9.0	8.5	6.8	5.8	5.5	5.1F	5.1F
29	4.9F	4.7F	(4.7)F	[4.3]F	(3.9)FS	(3.7)FS	4.7F	7.9	9.4	10.7FS	11.8	12.0	12.0	11.8	(11.4)S	10.9	[10.2]SC	(9.4)SP	(8.8)S	(7.8)S	6.7F	6.4F	5.8F	5.0F
30	4.3F	4.1FS	4.5F	4.5F	(4.2)FS	(3.9)FS	4.9	8.2	7.6	11.0	(11.5)SF	12.2	12.2	11.5	11.5	11.0	10.3	9.6	8.4	(7.3)JS	(6.2)JS	5.8F	5.4F	5.2FS
31	5.4F	5.3F	5.3F	(5.0)FS	4.6F	S(3.9)JF	4.8F	7.9	8.8	7.4	9.6K	10.0K	9.7K	9.8K	10.0K	(9.9)SK	(9.4)SK	8.4K	6.8K	(5.9)SK	K5.3FS	K5.3FS	4.8FK	F(3.9)FS
Median	5.2	5.2	(4.7)	4.4	3.9	3.7	5.0	8.0	9.0	10.0	10.8	11.3	11.4	11.4	(11.4)	(11.0)	(10.2)	(9.5)	8.7	7.7	6.8	6.2	5.7	5.6
Count	30	30	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	30	30	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE

TABLE 40

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), October (Month), 1948

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J.W., J. J.S., J. M. C.

Calculated by: J. J.S., F. J. Mc., A. G. J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									230^{K}	230^{K}	230^{K}	210^{K}	210^{K}	220^{K}	210^{K}	220^{K}	Q^{K}	Q^{K}						
2									Q^{K}	230^{K}	220^{K}	230^{K}	230^{K}	220^{K}	210^{K}	Q^{K}	Q^{K}	Q^{K}						
3									Q	Q	200	200	230	230	220	230	Q	Q						
4									Q	Q	200	Q	210	C	C	220	$(230)^{C}$	Q						
5									Q	220	220	Q	230	230	220	230	240	Q						
6									Q	200	210	210	200	220	220	220	Q	Q						
7									Q	220	200	B	220	220^{H}	220	230	230	Q						
8									220	A	230	230	A	S^{C}	S^{C}	Q	Q	Q						
9									Q	200	$(200)^{S}$	200	200	220	Q	Q	Q	Q						
10									200^{K}	210^{K}	200^{K}	200^{K}	220^{K}	220^{K}	220^{K}	230^{K}	230^{K}	Q^{K}						
11									S^{K}	S^{K}	210^{K}	200^{K}	C^{K}	230^{S}_{K}	$(250)^{S}_{K}$	Q^{K}	Q^{K}	Q						
12									Q	220	220	200	200	230	230	Q	Q	Q						
13									Q	Q	Q	200	200	220	$(220)^{C}$	220	230	Q						
14									Q	210	200	210	Q	220	220	Q	Q^{K}	Q^{K}						
15									Q	Q	200^{F}	230	210	220	220	Q	Q	Q						
16									Q	Q	Q	200^{S}	Q	220	Q	Q	Q	Q						
17									Q	Q	Q	220	230	Q	Q	Q	Q	Q^{K}						
18									Q^{K}	220^{K}	220^{K}	220^{K}	210^{K}	S^{K}	230^{K}	230^{K}	Q^{K}	Q^{K}						
19								300^{K}	250^{K}	250^{F}_{K}	230^{F}_{K}	$^{K}260^{F}_{S}$	250^{F}_{K}	$^{K}250^{F}_{H}$	230^{K}	230^{K}	240^{K}	Q^{K}						
20									Q	210	200	$(210)^{S}$	220	$(220)^{S}$	230	230	Q	Q						
21									Q^{K}	Q^{K}	210	200	Q	230	230	230	230	Q						
22									Q	Q	200	Q	Q	$(200)^{S}$	220	230	Q	Q						
23									Q	200	230	Q	B	$(230)^{S}$	Q	Q	Q	Q						
24									Q	$(230)^{S}$	A	220	S	$(230)^{S}$	Q	Q	Q	Q						
25									Q	Q	220	200	$(200)^{S}$	Q	Q	$(210)^{C}$	Q	Q						
26									Q	210^{H}	$(200)^{S}$	220	220	200	Q	Q	Q	Q						
27									Q	200	200	200	210	210	220	230	Q	Q						
28									Q	A	Q	230	Q	220	220	Q	Q	Q						
29									Q	210^{H}	200	200	200	200	210	220	Q	Q						
30										A	A	210	200	210	210	Q	Q	Q						
31										220	210^{K}	210^{K}	210^{K}	$(220)^{S}_{K}$	220^{K}	230^{K}	Q^{K}							
Median										215	210	210	210	220	220	230	230							
Count										18	25	26	22	26	22	17	7							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 41

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C

Form adopted June 1946

IONOSPHERIC DATA

f°F1 (Characteristic), Mc (Unit), October (Month), 1948

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. J. S., J. M. C.

Calculated by: J. J. S., F. J. Mc., A. G. J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									4.5 FK	4.6 K	46 K	5.0 K	L K	L K	L K	L K	Q K	Q K						
2									Q K	49 K	49 K	4.9 K	L K	49 K	L K	Q K	Q K	Q K						
3									Q	Q	41	L	L	L	L	L	Q	Q						
4									Q	Q	L	Q	L	C	C	L	L	Q						
5									Q	L	L	Q	L	L	5.5	L	L	Q						
6									Q	39	L	L	S	L	L	L	Q	Q						
7									Q	L	L	L B	L	L	L	L	L	Q						
8									L	A	L	L	L	S C	L S	Q	Q	Q						
9									Q	L	L	L	L	L	Q	Q	Q	Q						
10									35 K	(42) SK	46 K	K L HS	L K	5.5 K	L K	L K	L K	Q K						
11									L K	L SK	L K	L K	C K	L SK	L K	Q K	Q K	Q						
12									Q	L	L	L	L	L	L	Q	Q	Q						
13									Q	Q	Q	L	L	L	L	L	L	Q						
14									Q	L	L F	L S	Q	L	L	Q	Q K	Q K						
15									Q	Q	L	L	L	L	L	Q	Q	Q						
16									Q	Q	Q	L S	Q	L	Q	Q	Q	Q						
17									Q	Q	Q	L	L	Q	Q	Q	Q	Q K						
18									Q K	L K	L K	L K	L K	L K	L SK	L K	Q K	Q K						
19								K(4.1) FS	37 FK	K(4.2) FS	43 K	4.5 K	4.7 K	48 K	49 K	4.9 K	L K	Q K						
20									Q	L	L	L	L	L	L	L	Q	Q						
21									Q K	Q K	L	L	Q	L	L	L	L	Q						
22									Q K	Q	L	Q	Q	L	L	L	Q	Q						
23									Q K	L	L	Q	L	L	Q	Q	Q	Q						
24									Q K	L	A	L	L	L	Q	Q	Q	Q						
25									Q K	Q	L	L	L	Q	Q	L C	Q	Q						
26									Q K	L	L	L	L	L	Q	Q	Q	Q						
27									Q K	L	L	L H	L	L	L	L	Q	Q						
28									Q K	A	Q	L	Q	L	L	Q	Q	Q						
29									Q K	L	L	L	L	L	L	L	Q	Q						
30										A	A	L	L	L	L	Q	Q	Q						
31										L S	L K	L K	L K	L K	L K	L K	Q K							
Median										42	4.6													
Count										5	5													

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE

Form adopted June 1946

TABLE 42

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), October (Month), 1948

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. J. S., J. M. C.

Calculated by: J. J. S., F. J. M^{c}, A. G. J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								120^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	120^{K}						
2								100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	110^{K}	100^{K}	100^{K}	100^{K}	110^{K}	110^{K}						
3								110	110	110	110	100	100	100	100	100	110	120	130					
4								110	100	100	100	100	110	C	C	110	100	100						
5								100	A	100	100	100	100	100	100	100	110	110						
6								130	100	100	100	100	100	100	100	100	100	110	A					
7								100	100	100	100	B	110	S^{C}	100	100	100	120						
8								100	100	A	B	100	C	110	110	130	100	110	100					
9								(100)^{S}	100	100	110	100	100	100	100	100	100^{H}	110						
10								110^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	120^{K}						
11								100^{K}	110^{K}	110^{K}	100^{K}	100^{K}	C^{K}	100^{K}	100^{K}	100^{K}	100^{K}	110						
12								120	100	100	100	100	100	100	100	100	100	110						
13								(130)^{A}	110	100	100	100	100	100	100	100	100	100						
14								110	100	100	100	100	90	100	100	100	100^{K}	110^{K}						
15								100	100	100	100	100	100	100	100	100	100	120						
16								100	100	100	100	(110)^{A}	100	(120)^{A}	100	100	100	110						
17								A	100	100	100	100	100	100	100	100	100	100^{K}						
18								120^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	A^{K}	130^{K}						
19								B^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	110^{K}						
20								110	100	100	100	90	100	100	100	(100)^{C}	S^{C}	120						
21								110^{K}	100^{K}	110^{K}	100	100	100	100	100	100	110	(110)^{S}						
22								130	110	100	100	(100)^{S}	100	100	100	100	110	(130)^{S}						
23								130	110	100	100	A	B	110	110	110	110							
24									(120)^{A}	A	A	(120)^{A}	110	100	100	B	A	B						
25								100	100	100	A	110	100	100	110	(110)^{C}	(120)^{C}	A						
26								B	100	100	110	110	120	120	100	110	110	100						
27								110	110	110	(110)^{A}	100	100	100	(110)^{A}	100	110							
28								100	100	100	100	A	100	110	110	110	100							
29								100	100	100	100	100	100	110	100	110	110							
30								(130)^{S}	100	A	A	A	120	110	110	100	(110)^{A}							
31								110	100	100	100^{K}	100$^{F}_{K}$	100^{K}	(100)$^{S}_{K}$	110^{K}	(110)$^{S}_{K}$	110^{K}							
Median								110	100	100	100	100	100	100	100	100	100	110						
Count								27	30	28	27	27	28	29	30	30	28	23						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 43

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°E (Characteristic), Mc (Unit), October (Month), 1948

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. J. S., J. M. C.

Calculated by: J. J. S., F. J. McG., A. G. J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								2.3 K	2.8 K	3.1 K	3.2 K	(3.4) CK	(3.4) CK	(3.4) CK	3.3 K	2.9 K	(2.6) CK	2.1 K						
2								2.1 K	2.6 K	3.1 K	3.3 K	3.2 K	3.3 K	3.3 K	3.3 K	3.0 K	2.6 K	2.1 K						
3								2.1 H	(2.9) H	A	(3.3) C	(3.3) C	3.3	(3.4) CP	(3.3) C	3.1	2.7	2.1 F	1.9					
4								(2.0) A	[2.6] A	(3.1) C	3.1	(3.1) C	(3.3) C	C	C	3.2	2.7	2.1						
5								2.1 H	2.8	3.3	3.3	[3.4] C	(3.6) C	(3.5) C	(3.3) FS	(3.0) S	2.7	2.1						
6								2.1	2.9 H	(3.3) SC	(3.3) C	[3.4] C	(3.5) S	3.7	(3.5) S	(3.2) C	2.9	2.1	A					
7								A	2.9	(3.3) S	S C	B	(3.3) SB	[3.3] SC	3.3 SC	(3.3) C	2.9	2.1						
8								1.9	[2.4] C	3.0	B	C	C	S C	(3.2) SC	(3.1) S	2.7	2.0	A					
9								2.5	2.7	(3.1) S	(3.3) SC	[3.3] S	(3.3) SC	(3.5) SC	(3.3) SC	[3.0] S	2.8	2.1						
10								2.2 K	2.8 K	(3.4) SK	3.2 K	(3.3) SK	(3.1) SK	(3.9) SK	(3.3) SK	(3.1) SK	2.7 K	2.0 K						
11								A K	S CK	(3.6) SK	(3.7) SK	C K	C K	3.7 K	[3.4] CK	3.2 K	2.8 K	(2.3) SC						
12								2.2	2.9	3.3	3.3	3.5	(3.5) C	3.7	3.5	3.3	2.7	2.0						
13								2.1 H	2.9 H	3.2 H	(3.3) C	(3.3) C	(3.6) C	(3.6) C	(3.3) C	(3.3) SC	(2.7) S	(2.0) FS						
14								(2.1) H	2.8 FS	(3.2) S	(3.4) SC	(3.5) SC	(3.8) SP	(3.7) SC	(3.5) SC	3.1 H	2.8 K	(2.1) SK						
15								2.1	(2.9) S	(3.1) SC	3.3	3.5	3.6	3.5	(3.3) H	(3.1) FS	2.5	2.3						
16								(2.2) S	(2.8) S	3.1	(3.5) SC	(3.7) S	(3.7) S	(3.7) S	3.5	3.2	2.7	(2.0) C						
17								A	2.8 F	3.2	A	A S	S	(3.7) S	3.3	3.1	(2.6) FS	A K						
18								2.2 K	2.6 K	(2.9) FK	S CK	S CK	K (3.2) SC	A SK	A SK	A SK	A SK	1.9 K						
19								B K	2.8 FK	3.1 FK	3.3 K	3.3 K	3.4 K	K [3.3] SC	3.2 K	2.9 HK	(2.5) SK	A K						
20								2.1 H	(2.6) S	(3.1) A	(3.3) S	(3.4) S	S C	S C	(3.3) SC	3.1	[2.6] SC	(2.1) SC						
21								2.2 K	2.7 K	(3.3) SK	(3.3) SC	3.4	[3.4] SC	(3.3) SC	(3.3) SC	(3.3) H	(2.7) C	(1.9) A						
22								2.0	2.7	(3.1) FS	[3.2] A	3.3	(3.5) SC	(3.3) S	3.3	3.0	2.6	S C						
23								2.1 H	2.5	3.0 H	(3.2) S	A	B	S C	3.3	3.1	(2.5) S							
24									2.7 H	3.1	[3.3] A	3.5	S C	S C	3.3	B	A	B						
25								A	A	3.1	A	3.5	3.5	[3.4] SC	3.4	3.1	(2.4) C	A						
26								B	2.5 H	(3.0) S	(3.1) S	(3.3) SC	(3.5) C	(3.3) C	(3.1) S	3.0	C	A						
27								2.0	2.5	2.9	(3.2) C	(3.3) C	(3.5) C	3.5	3.2	3.0	(2.5) S							
28								A S	A	A	A	3.2	3.3	3.3	3.2	2.8	2.4							
29								C	S C	2.9	3.3	3.3	3.5	3.3	3.2	2.9	2.5							
30								1.9	A	A	A	A	3.5	3.3	3.2	2.9	2.3							
31								1.9 H	(2.3) S	2.8	3.2 K	3.3 K	K (3.4) FC	3.4 K	3.2 K	A K	A SK							
Median								2.1	2.8	3.1	(3.3)	(3.3)	(3.5)	3.4	3.3	3.1	2.7	2.1						
Count								22	26	28	24	24	25	25	29	28	27	19						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 44

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc-Km (Unit), October (Month), 1948

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.J.S., J.M.C.

Calculated by: J.J.S., F.J.McC., A.G.J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2								2.1 110								4.3 120	3.1 110		1.9 120					
3							1.8 110			4.3 110								1.8 100		3.4 110				
4								2.3 110	2.8 100					C	C									
5									3.0 100		3.5 100													
6						3.1 100		2.3 100										2.5 110	2.0 90	1.9 100	2.1 100	4.6 100	2.0 100	3.2 100
7	2.9 100	2.8 100	2.7 100	2.9 100	4.5 100	3.1 100	3.3 100	2.1 100										4.2 120	3.4 110		3.2 100	5.8 100	3.7 100	
8								2.0 120	3.1 110	2.9 100		4.0 100	4.6 120	5.6 110	4.0 110	2.9 110	4.2 110	2.5 110	5.4 100	3.3 100	4.0 100			
9																								
10																						3.1 110	1.7 110	
11								3.0 110		5.1 110			C					1.9 100	1.9 100					
12																			3.0 100		1.9 100			
13				1.4 120	3.8 110			2.2 100																
14						2.4 100		3.2 100	3.6 100	3.1 100														
15																			3.2 100			3.0 100	2.9 100	
16						2.0 100						3.1 100		3.0 100					2.2 100	3.0 100				
17		3.0 100	3.0 100			1.8 100	3.2 100	5.7 100	2.9 100	3.4 100	4.0 100	4.2 100					3.1 100	3.2 100						
18		2.0 120	2.0 140		1.4 100		2.4 100	1.8 100						5.4 100	3.2 100	4.3 100	4.4 100	3.9 130	3.9 120					
19			1.6 100	1.9 100														3.0 110		2.2 130				
20			3.1 100	3.5 100	3.2 100	3.1 100		3.0 100		6.4 100					2.1 90		1.8 100		3.1 100	1.9 100				
21							5.7 100											2.3 100		3.1 100	5.6 100			2.0 100
22	5.7 100	2.9 100	2.0 100	3.1 110				1.9 110	5.7 100	4.6 120	15.0 110													1.4 130
23		3.3 100	3.0 100								3.1 100	5.1 100												
24			1.9 100	3.0 100		3.2 100			3.1 100	4.0 100	7.0 100	5.9 100					3.2 100				1.8 100			
25					2.0 100		3.6 100	3.1 100	2.5 100	3.5 100	3.5 100			2.6 110			3.1 110	4.9 100	3.5 100	4.2 100				
26					2.9 100	3.1 120	3.8 130						3.4 100					2.0 100						1.9 100
27	2.0 110										2.5 100				3.1 100									
28	1.7 130	2.1 120			1.5 100	7.8 100	9.3 100	3.9 100	5.4 100	11.7 100	3.4 100	2.9 100							2.0 100					1.9 100 F
29	3.0 100	3.7 100		1.7 100												2.5 90	2.9 90							
30									5.7 100	6.7 100	7.8 100	9.0 100	2.7 100	2.4 100			1.9 90	1.9 110	1.8 90					
31															5.6 100	3.1 110	2.3 110		2.0 90	1.8 100	2.3 100			
Median	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Count	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	30

** MEDIAN fEs LESS THAN MEDIAN f°E OR LESS THAN LOWER FREQUENCY LIMIT OF RECORDER.

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 45

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

F2-M1500 (Characteristic), ____ (Unit), October (Month), 1948

National Bureau of Standards (Institution)

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

Scaled by: E. J. W., J. J. S., J. M. C.

Calculated by: J. J. S., F. J. Mc., A. G. J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.9F	1.6FK	1.6FK	1.8	(1.7)SK	(1.7)FK	(1.8)FK	2.0FK	1.8FK	1.8K	2.0K	1.9K	2.0K	2.1K	2.1K	2.1K	(2.1)PK	(2.1)PK	(2.2)PK	2.0K	1.9K	1.9K	1.8K	1.8K
2	1.8K	1.7FK	(1.6)FK	(1.5)FK	(1.6)FK	(1.8)FK	2.0FK	2.0FK	2.0FK	1.8FK	(1.7)JK	1.8K	1.9K	(2.0)FK	2.1K	2.1K	2.0K	2.1K	2.1K	1.9K	(2.0)JC	2.0	1.8	1.8F
3	1.8F	1.8F	1.8F	1.9F	1.9F	1.9F	2.1F	2.3	2.3	2.1	2.1	(2.0)P	(1.9)CP	2.0	(1.9)JP	(2.1)P	(2.1)P	(2.2)SP	(2.2)P	2.0	1.9	(2.0)J	(2.0)J	2.0
4	2.1	2.0F	1.8F	1.7F	1.9	(2.0)FY	2.1F	2.3	2.4	2.2	(2.2)P	(2.1)SP	2.1	C	C	(2.2)CP	(2.0)C	(2.4)CP	(2.4)CP	2.1	1.9	1.9	2.0	(1.9)J
5	(1.8)J	(1.8)J	(1.8)J	(1.9)J	1.9	2.1	2.0	2.4	(2.4)P	(2.2)S	2.2	2.1	(2.2)CP	P(2.1)JS	2.1	(2.0)SP	(2.1)SP	(2.3)SP	(2.4)SP	2.1	2.0	2.0	(2.0)FS	1.9
6	(1.9)JS	(2.0)JS	(2.1)J	2.0	(2.0)JS	(1.9)F	2.1	2.4	(2.4)SP	(2.5)CP	2.1	2.1	2.1	2.1	P(2.1)SC	2.1	P(2.3)SC	SC	P(2.1)SC	2.1	(2.1)S	(1.9)JF	(1.9)JS	(2.1)JS
7	2.0	2.0	(2.1)F	2.0	(2.0)S	(2.0)S	C(2.1)JS	(2.3)SC	(2.2)SC	(2.3)SC	(2.2)SC	2.1	2.1	2.3	(2.1)S	(2.1)P	(2.4)P	(2.4)P	(2.5)S	2.0	2.1	1.9	2.1	2.0
8	(2.0)P	2.0	(2.0)P	2.0	2.0	2.0	2.0	2.3	(2.4)P	(2.3)P	(2.1)P	2.0	2.1	(2.0)S	P(2.1)SC	P(2.2)SC	P(2.2)SC	P(2.4)SC	P(2.4)SC	2.1	2.1	(2.0)JS	2.0	1.9
9	1.9	(2.0)JS	2.0	(2.0)S	2.2	2.0	2.0	2.5	2.3	(2.3)SP	(2.3)SP	2.1	(2.1)S	2.0	(2.0)S	P(2.1)SC	P(2.2)SC	P(2.3)SC	(2.3)CP	2.1	2.1	(2.0)J	(2.0)P	(1.9)SP
10	1.8	(1.8)SK	K(1.5)FC	(1.6)FK	(1.6)FK	(1.7)FK	(1.9)FK	K(2.2)SC	2.2K	(2.1)SK	1.9K	1.8K	1.8K	1.9K	1.9K	1.9K	2.0K	K(2.0)FS	K(1.9)FS	1.8K	1.9K	1.9K	(1.8)SK	1.9K
11	(1.9)FK	FSK	K(1.7)FS	(1.6)FK	(1.7)FK	(1.7)FK	1.9K	2.2K	J S(2.0)CK	2.1K	2.1K	(2.0)CK	CK	(1.9)CK	1.9K	1.9K	2.0K	2.1	2.1	2.0	(1.9)J	(2.0)JF	(1.9)P	1.8
12	1.8	1.8	1.9	(1.9)F	S(1.8)JF	(1.9)F	(1.9)F	2.1	2.4	(2.4)P	2.0	2.1	2.0	1.9	2.0	2.0	2.1	(2.3)SP	(2.1)SP	2.1	2.0	1.9	(1.8)JF	1.9F
13	1.9F	(1.8)F	1.9F	1.8F	1.7F	1.9F	1.8F	2.4FS	2.3	2.2	2.1	2.0	2.0	1.9	1.9	(1.9)JS	(2.0)S	(2.1)S	(2.1)S	2.0	(2.2)JS	(1.9)JS	(1.8)JS	(2.1)JS
14	(1.8)FS	(1.9)JS	(1.9)F	(2.0)S	(2.0)FS	(1.9)FS	1.9F	(2.2)S	(2.3)SP	2.3	2.1	(2.0)S	(2.0)SP	(2.0)SP	(2.0)SP	(2.0)SP	2.0K	P K(2.2)SC	1.9K	(1.7)SK	SCK	(1.8)CK	SCK	FK
15	(1.8)FK	(1.9)FK	(1.6)FK	(1.6)FK	(1.5)FK	(1.6)F	1.8F	(2.1)S	2.2	2.1	(2.1)S	2.0	1.9	2.0	2.0	2.0	(2.1)SP	SC	(2.1)SC	2.1SC	2.0	2.0	2.0	(1.9)F
16	(1.7)FS	(1.8)FS	P(1.8)FS	P(2.0)FS	(1.8)FS	2.0F	2.0F	2.4	(2.3)SP	(2.2)S	(2.1)P	2.0	2.1	2.0	2.0	(2.0)SP	(2.1)S	2.0	(2.1)SP	2.0SP	2.0F	2.0	(2.0)S	C
17	2.0F	J(1.7)FS	(2.0)F	(1.9)F	(1.6)F	(1.8)F	(2.0)FS	(2.3)F	(2.4)SP	(2.3)SP	2.0	2.2	(2.1)SP	2.1	P(2.0)SC	P(2.1)SC	P(2.1)SC	2.3K	(1.7)JK	(1.5)FK	FK	(1.6)FK	(1.6)FK	1.6FK
18	1.7FK	(1.6)FK	1.6FK	1.6FK	1.7FK	1.8FK	1.9FK	K(2.0)FS	2.1K	2.0K	1.9K	1.8K	K(1.9)SP	(1.9)PK	1.9K	2.1K	1.9K	2.0K	1.9K	1.9K	FK	1.6FK	1.6FK	FK
19	FK	FK	1.5FK	1.5FK	FK	1.6FK	1.6FK	GK	FK	(1.6)FK	(1.5)FK	GK	1.5K	1.6K	1.9K	1.7K	1.8K	2.0K	(1.7)CK	1.8K	1.8K	1.8K	1.8FK	1.8K
20	1.8F	1.9F	2.0F	1.8F	1.9F	1.9F	1.9	2.3	2.1	(2.2)SP	(2.3)SP	(2.1)SP	(2.0)SP	(1.9)SP	1.8	P(2.0)SC	(2.1)SC	(2.5)SC	(1.9)SC	2.0	(2.0)JS	1.9K	K(1.8)JS	1.8K
21	1.7FK	FK	FK	(1.7)FK	(1.7)FK	(1.6)FK	(1.5)FK	2.0FK	2.0FK	(2.1)SK	2.0	2.0	(2.0)C	1.9	1.9	(2.0)S	(2.0)C	2.0	(2.1)S	1.9	1.9	1.9	(2.0)S	1.9
22	1.9F	1.9F	2.0F	1.9F	1.9F	1.8F	1.8F	2.1	2.4	(2.3)S	2.1	2.1	(2.2)S	2.1	2.1	2.0	2.1	(2.0)SP	P(2.2)SC	2.1	(2.0)JS	1.8F	1.8	(1.8)FS
23	(1.8)FS	(2.1)F	(1.9)FS	(1.9)F	S(1.9)JF	(2.1)F	(2.1)F	2.2F	2.5	2.0	2.1	2.3	(2.1)SP	2.0	2.0	(2.1)SP	2.1	2.0	(2.0)SP	(1.9)SP	2.1	2.0	F(1.9)JS	(2.2)JF
24	1.9F	1.9F	SF	(1.9)F	(2.3)F	2.2F	2.1F	2.3F	(2.2)F	(2.6)SP	2.0	2.1	2.1	2.1	(2.0)SP	(2.0)SC	P(2.1)SC	P(2.0)SC	(2.1)S	P(2.5)SC	2.0	2.1	2.0	(1.9)JS
25	1.9	1.9	1.9	(1.9)FS	1.9F	1.9F	(2.0)FS	2.3	2.3	2.4	2.2	2.0	(2.1)SP	2.0	2.1	(2.2)C	(2.1)SC	2.1	2.1	2.0	2.0	2.0	(2.0)JS	(1.8)S
26	1.8F	1.8F	1.9F	1.9F	1.8F	1.8F	2.0F	2.1F	2.2	2.1	2.1	2.3	2.1	2.1	P(2.1)SC	(2.1)J	2.1	(2.1)S	(2.1)P	1.8	1.9	(2.0)J	(1.9)J	(1.9)J
27	1.9	1.8	1.9	2.0F	1.9F	1.7F	1.9F	2.3F	2.4F	2.2F	2.1F	2.1	2.1	2.1	2.3	2.1	2.1	P(2.3)SC	P(2.1)SC	P(2.2)SC	F(2.1)JS	(2.0)FS	2.0	1.9
28	1.9	2.0F	(1.9)F	2.0F	1.9F	1.9F	(1.9)FS	(2.6)JS	2.3	2.4	2.1	2.3	2.1	2.1	(2.0)S	2.1	2.2	2.2	2.0	2.2	2.0	1.9	2.0	2.0F
29	2.0F	2.0F	1.9F	(1.9)F	(2.1)FS	(2.0)FS	(2.2)F	(2.3)F	2.3	2.3	2.2	2.1	2.1	2.2	2.3	2.2	2.2	P(2.2)SC	(2.1)SP	2.1	(2.1)FS	2.0F	2.1F	2.2F
30	1.7F	1.9F	(1.9)F	1.8F	2.1F	S(2.0)JF	(2.1)FS	2.2	2.3	2.3	2.2	2.2	2.2	(2.1)S	2.2	2.1	2.1	(2.3)SP	2.1F	2.2	(2.1)S	(2.1)FS	1.9F	1.9F
31	1.8F	1.8FS	1.9F	1.8FS	1.8F	(1.9)FS	1.8F	2.1	2.3	2.2	2.3K	2.1K	2.1K	2.1K	(2.2)SK	(2.1)SK	(2.3)SK	2.2K	2.1K	2.1K	K(2.1)FS	2.1FK	K(2.1)FS	2.1FK
Median	1.8	1.9	1.9	(1.9)	1.9	(1.9)	2.0	2.3	2.3	2.2	2.1	2.1	2.1	2.0	2.0	(2.1)	(2.1)	(2.2)	(2.1)	2.0	2.0	2.0	(2.0)	1.9
Count	30	28	29	31	30	31	31	31	30	31	31	31	30	30	30	31	31	29	31	31	28	31	30	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 46

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F2-M3000 (Characteristic), ____ (Unit), October (Month), 1948

National Bureau of Standards (Institution)

Observed at Washington, D. C.

Lat. 39.0°N, Long. 77.5°W

75°W Mean Time

Scaled by: E. J. W., J.J.S., J. M. C.

Calculated by: J. J. S., F. J. Mc, A. G. J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.8F	2.4FK	2.4FK	2.7K	(2.6)SK	(2.5)FK	(2.7)FK	3.0FK	2.7FK	2.7K	2.9K	2.8K	3.0K	3.2K	3.2K	3.1K	(3.1)PK	(3.1)PK	(3.3)PK	3.0K	2.9K	2.8K	2.7K	2.8K
2	2.7K	2.6FK	(2.4)FK	(2.3)FK	(2.4)FK	(2.7)FK	2.9FK	2.9FK	3.0FK	2.8FK	(2.7)JK	2.8K	2.9K	2.9FK	3.0K	3.0K	3.0K	3.1K	3.1K	2.9K	(3.1)JC	3.0	2.7	2.7F
3	2.8F	2.7F	2.8F	2.8F	2.8F	2.9F	3.1F	3.4	3.3	3.0	3.1	(3.0)P	(2.9)CP	2.9	(2.9)JP	(3.1)P	(3.0)P	(3.2)SP	(3.2)P	3.0	2.9	(3.0)J	(3.0)J	2.9
4	3.1	3.0F	2.7F	2.6F	2.8	(3.0)FV	3.2F	3.4	3.5	3.3	(3.2)	(3.0)SP	3.2	C	C	(3.3)CP	(3.3)C	(3.6)CP	(3.6)CP	3.2	2.9	2.8	2.9	(2.8)J
5	(2.8)J	(2.8)J	(2.8)J	(2.9)J	2.9	3.1	3.0	3.5	(3.3)CP	(3.3)S	3.1	3.2	(3.2)CP	P(3.1)JS	3.2	(3.0)SP	(3.2)SP	(3.3)SP	(3.4)SP	3.1	3.1	3.0	(2.9)FS	2.8
6	(2.9)JS	(3.0)JS	(3.1)J	3.1	(2.9)JS	(2.9)F	3.2	3.5	(3.5)SP	(3.6)CP	3.1	3.2	3.1	3.0	C(3.1)SP	3.1	P(3.3)SC	S C	P(3.3)SC	3.0	(3.1)S	(2.9)JF	(2.9)JS	(3.1)JS
7	3.0	3.0	(3.1)F	3.1	(3.0)S	(2.9)S	C(3.1)JS	(3.4)SC	(3.3)SC	(3.3)SC	(3.2)SC	3.2	3.1	3.1	(3.1)S	(3.0)P	(3.4)P	(3.4)P	(3.4)	3.1	3.0	2.9	3.0	3.0
8	(3.1)P	3.0	(2.9)P	3.0	2.9	3.0	3.0	3.3	(3.4)P	(3.2)P	(3.1)P	3.1	3.1	(3.1)S	P(3.2)SC	P(3.3)SC	P(3.3)SC	P(3.5)SC	P(3.4)SC	3.2	3.1	(3.0)JS	3.0	2.9
9	2.9	(2.9)JS	2.9	(3.0)S	3.2	2.9	3.1	3.6	3.4	(3.5)SP	(3.4)SP	3.1	(3.1)S	3.1	(3.1)S	P(3.1)SC	P(3.1)SC	P(3.4)SC	(3.4)CP	3.1	3.1	(2.9)J	(2.9)P	(2.8)SP
10	2.7	(2.6)SK	K(2.4)FC	(2.4)FK	(2.4)FK	(2.5)FK	(2.8)FK	K(3.2)SC	3.2K	(3.0)SK	2.8K	2.7K	2.7K	2.8K	2.8K	2.8K	2.9K	K(2.9)FS	K(3.0)FS	2.8K	2.8K	2.8K	(2.6)SK	2.7K
11	(2.8)FK	F SK	K(2.5)FS	(2.4)FK	(2.5)FK	(2.6)FK	2.7K	3.1K	CK(3.1)JS	3.1K	3.1K	(2.9)CK	C K	(2.9)CK	2.8K	2.9K	2.9K	3.1	3.1	2.9	(2.9)J	(3.3)JF	(2.9)P	2.7
12	2.7	2.7	2.8	(2.9)F	S(2.7)JF	(2.9)F	(2.9)F	3.2	3.2	(3.5)P	3.1	3.1	3.0	3.2	2.9	3.0	3.2	(3.3)SP	(3.0)SP	3.1	3.0	2.8	(2.8)JF	2.9F
13	2.8F	(2.7)F	2.9F	2.8F	2.6F	2.8F	2.8F	(3.4)FS	3.4	3.2	3.0	3.0	3.0	2.9	2.9	(2.8)JS	(3.1)S	(3.2)S	(3.1)S	3.0	(3.2)JS	(2.9)JS	(2.8)JS	(3.1)JS
14	(2.7)FS	(2.9)JS	(2.9)F	(2.9)S	(3.1)FS	(2.8)FS	2.9F	(3.4)S	(3.4)SP	3.3	3.1	(3.0)S	(3.0)SP	(3.0)SP	(3.1)SP	(3.1)SP	3.0K	PK(3.2)SC	2.9K	(3.2)SK	S CK	(2.7)CK	S CK	F K
15	(2.5)FK	(2.6)FK	(2.5)FK	(2.5)FK	(2.4)FK	(2.5)F	2.7F	(3.2)S	3.3	3.2	(3.1)S	3.1	2.9	2.9	2.9	3.0	(3.2)SP	S C	(3.2)SC	(3.2)SC	2.9	3.0	2.9	(2.8)F
16	(2.6)FS	(2.7)FS	P(2.7)FS	P(3.0)FS	(2.7)FS	2.9F	2.9F	3.4	(3.4)SP	(3.3)S	(3.1)P	3.0	3.1	2.9	3.0	(3.9)SP	(3.1)S	3.0	(3.0)SP	(3.1)SP	2.9F	3.0	(3.0)S	C
17	2.9F	S(2.9)JF	(2.9)F	(2.8)F	(2.4)F	(2.8)F	(2.9)FS	(3.4)F	(3.5)SP	(3.4)SP	3.0	3.1	(3.1)SP	3.1	P(3.0)SC	P(3.2)SC	P(3.1)SC	3.1K	(2.5)JK	(2.2)FK	F K	(2.4)FK	(2.5)FK	2.5FK
18	2.5FK	(2.4)FK	2.3FK	2.4FK	2.5FK	2.7FK	3.0FK	K(3.0)FS	3.1K	3.0K	2.8K	2.7K	K(2.8)SP	(2.9)PK	2.8K	3.1K	2.9K	3.0K	2.9K	2.8K	F K	2.4FK	2.4FK	F K
19	F K	F K	2.4FK	2.3FK	F K	2.4FK	2.4FK	G K	F K	(2.4)FK	(2.2)FK	G K	2.3K	2.5K	2.6K	2.6K	2.8K	3.0K	(2.6)CK	2.8K	2.7K	2.7K	2.7FK	2.8K
20	2.8F	2.8F	2.9F	2.7F	2.8F	2.8F	2.9	3.3	3.1	(3.2)SP	(3.3)SP	(3.0)SP	(3.0)SP	(2.9)SP	2.9	C(3.0)SP	(3.1)SC	(3.3)SC	(2.9)SC	2.9	(2.9)JS	2.8K	K(2.8)JS	2.9K
21	2.7FK	F K	F K	(2.5)FK	(2.6)FK	(2.5)FK	(2.4)FK	2.9FK	2.9K	(3.1)SK	3.0	3.0	(3.0)C	2.8	2.8	(3.1)S	(2.9)C	3.0	(3.1)S	2.9	2.9	2.8	(3.0)S	2.9
22	2.9F	2.9F	2.9F	2.8F	2.8F	2.7F	2.6F	3.2	3.4	(3.4)S	3.2	3.2	(3.2)S	3.1	3.1	3.0	3.0	(3.1)SP	P(3.2)SC	3.1	(2.9)JS	2.7F	2.7	(2.7)FS
23	(2.6)FS	(3.1)F	(2.8)FS	(2.8)F	S(2.8)JF	(3.0)F	(3.0)F	3.4F	3.6	3.0	3.2	3.1	(3.1)SP	3.0	2.9	(3.1)SP	3.1	3.1	(3.1)SP	(2.9)SP	3.2	3.0	S(2.7)JF	(3.2)JF
24	2.9F	2.9F	S F	(2.8)F	(3.4)F	3.3F	3.1F	3.4F	(3.3)'	(3.5)SP	3.0	3.2	3.2	3.1	(3.1)SP	(3.0)SC	P(3.1)SC	P(3.1)SC	(3.1)S	P(3.3)SC	2.9	3.1	3.0	(2.9)JS
25	3.0	2.8	2.8	(2.9)FS	2.8F	2.9F	(3.0)FS	3.4	3.2	3.4	3.3	3.1	(3.2)SP	3.0	3.0	(3.2)C	(3.1)SC	3.1	3.3	3.0	3.1	3.0	(3.0)JS	(2.7)S
26	2.7F	2.7F	2.9F	2.9F	2.6F	2.8F	3.0F	3.2F	3.3	3.1	3.2	3.1	3.0	3.1	P(3.0)SC	(3.2)J	3.2	(3.1)S	(2.8)P	2.7	2.8	(2.9)J	(2.9)J	(2.8)J
27	2.8	2.8	2.8	2.9F	3.3F	2.7F	2.8F	3.2F	3.4F	3.3F	3.1F	3.1	3.2	3.2	3.2	3.2	3.1	P(3.4)SC	P(3.2)SC	P(3.2)SC	F(3.1)JS	(2.9)FS	2.9	2.8
28	2.9	3.1F	(2.8)F	(2.9)F	2.8F	2.9F	(2.8)FS	(3.4)JS	3.4	3.5	3.1	3.3	3.1	3.1	(3.1)S	3.1	3.2	3.2	3.0	3.2	3.0	2.9	3.0	3.0F
29	2.9F	3.0F	2.9F	(2.9)F	(3.0)FS	(2.9)FS	(3.1)F	(3.3)F	3.4	3.4	3.3	3.2	3.1	3.2	3.3	(3.2)S	3.2	P(3.3)SC	(3.2)SP	3.1	(3.2)FS	3.0F	3.1F	3.1F
30	2.7F	2.8F	(2.9)F	2.7F	3.1F	S(2.9)JF	(3.0)FS	3.4	3.3	3.4	3.3	3.3	3.2	(3.1)S	3.1	3.1	3.1	(3.3)SP	3.0F	3.2	(3.3)S	(3.1)FS	2.9F	2.8F
31	2.7F	2.7FS	2.7F	2.7FS	2.8F	(2.7)FS	2.7F	3.1	3.4	3.2	3.3K	3.1K	3.1K	3.1K	(3.2)SK	(3.2)SK	(3.2)SK	3.2K	3.2K	3.1K	K(3.1)FS	3.1FK	K(3.1)FS	3.3FK
Median	2.8	2.8	2.8	(2.8)	2.8	(2.8)	2.9	3.3	3.3	3.3	3.1	3.1	3.1	3.0	3.0	(3.1)	(3.1)	(3.2)	(3.1)	3.1	3.0	2.9	(2.9)	2.8
Count	30	28	29	31	30	31	31	31	30	31	31	31	30	30	30	31	31	29	31	31	28	31	30	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 47

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

FI-M3000 (Characteristic), _____ (Unit), October (Month), 1948

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.J.S., J.M.C.

Calculated by: J.J.S., F.J.McC, A.G.J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1									3.3 FK	3.4 K	3.6 K	3.4 K	L K	L K	L K	L K	Q K	Q K								
2									Q K	3.3 K	3.5 K	3.5 K	L K	3.6 K	L K	Q K	Q K	Q K								
3									Q	Q	4.1	L	L	L	L	L	Q	Q								
4									Q	Q	L	Q	L	C	C	L	L	Q								
5									Q	L	L	Q	L	L	3.7	L	L	Q								
6									Q	4.2	L	L	S	L	L	L	Q	Q								
7									Q	L	L	L B	L	L	L	L	L	Q								
8									L	A	L	L	L	S C	L S	Q	Q	Q								
9									Q	L	L	L	L	L	Q	Q	Q	Q								
10									4.2 K	(3.8) SK	3.9 K	H L SK	L K	3.3 K	L K	L K	L K	Q K								
11									L K	L SK	L K	L K	C K	L SK	L K	Q K	Q K	Q								
12									Q	L	L	L	L	L	L	Q	Q	Q								
13									Q	Q	Q	L	L	L	L	L	L	Q								
14									Q	L	L F	L S	Q	L	L	Q	Q K	Q K								
15									Q	Q	L	L	L	L	L	Q	Q	Q								
16									Q	Q	Q	L S	Q	L	Q	Q	Q	Q								
17									Q	Q	Q	L	L	Q	Q	Q	Q	Q K								
18									Q K	L K	L K	L K	L K	L K	L SK	L K	Q K	Q K								
19								F(2.7) SK	3.4 FK	F(3.5) SK	4.1 K	3.6 K	3.4 K	2.4 K	2.8 K	2.6 K	L K	Q K								
20									Q	L	L	L	L	L	L	L	Q	Q								
21									Q K	Q K	L	L	Q	L	L	L	L	Q								
22									Q	Q	L	Q	Q	L	L	L	Q	Q								
23									Q	L	L	Q	L	L	Q	Q	Q	Q								
24									Q	L	A	L	L	L	Q	Q	Q	Q								
25									Q	Q	L	L	L	Q	Q	L C	Q	Q								
26									Q	L	L	L	L	L	Q	Q	Q	Q								
27									Q	L	L	L H	L	L	L	L	Q	Q								
28									Q	A	Q	L	Q	L	L	Q	Q	Q								
29									Q	L	L	L	L	L	L	L	Q									
30										A	A	L	L	L	L	Q	Q	Q								
31										L S	L K	L K	L K	L K	L K	L K	Q K									
Median										3.5	3.9															
Count										5	5															

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702510

TABLE 48

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

E-M1500 (Characteristic), ____ (Unit), October (Month), 1948

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. J. S., J. M. C.

Calculated by: J. J. S., F. J. McC., A. G. J.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								4.3K	4.3K	4.1K	4.4K	(4.4)CK	(4.4)CK	(4.4)CK	4.2K	4.2K	(4.2)CK	4.0K						
2								4.7K	4.2K	4.0K	3.9K	4.4K	4.2K	4.2K	3.9K	4.2K	4.2K	4.2K						
3								4.2H	(4.1)H	A	(4.5)C	(4.3)C	4.1	(4.3)CP	(4.1)C	4.2	4.3	4.2F	4.5					
4								(4.4)A	A	(4.6)C	4.2	(4.2)C	(4.2)C	C	C	4.0	4.4	4.3						
5								4.3H	4.1	4.6	4.3	C	(4.4)C	(4.3)C	(4.2)FS	(4.2)S	4.1	4.3						
6								4.3	4.2H	(4.2)SC	(4.4)C	C	(4.3)S	4.0	(4.3)S	(4.4)C	4.0	4.4	A					
7								A	4.3	(4.2)S	SC	B	(4.2)SB	SC	(3.9)SC	(4.2)C	4.3	4.3						
8								4.2	C	4.3	B	C	C	SC	(4.4)SC	(4.3)S	4.4	4.4	A					
9								3.9	4.5	(4.2)S	(4.2)SC	S	(4.3)SC	(4.2)SC	(4.2)SC	S	4.0	4.1						
10								4.1K	4.3K	(4.2)SK	4.4K	(4.2)SK	(4.5)SK	(4.2)SK	(4.1)SK	(4.2)SK	4.2K	4.0K						
11								AK	SCK	(4.2)SK	(4.3)SK	CK	CK	4.1K	CK	4.1K	3.9K	(4.2)SC						
12								4.1	3.8	3.9	4.2	4.3	(4.3)C	4.0	4.2	4.2	4.2	4.3						
13								4.2H	4.1H	4.1H	(4.3)C	(4.5)C	(4.2)C	(4.2)C	(4.2)C	(4.2)SC	(4.3)S	(4.2)FS						
14								(3.9)H	4.1FS	(3.8)S	(4.2)SC	(4.3)SC	(4.0)SP	(4.1)SC	(4.3)SC	4.3H	4.1K	(4.1)SK						
15								4.8	(4.1)S	(4.2)SC	4.2	4.3	4.3	4.3	(4.5)H	(4.5)FS	4.4	4.1						
16								(4.2)S	(4.3)S	4.4	(4.2)SC	(4.1)S	(4.1)S	(4.1)S	4.2	4.3	4.2	(4.9)C						
17								A	4.2F	4.1	A	AS	S	(4.1)S	4.5	4.1	(4.4)FS	AK						
18								4.0K	4.2K	(4.4)FK	SCK	SCK	S(4.7)CK	ASK	ASK	ASK	ASK	4.1K						
19								BK	3.9FK	3.9FK	3.9K	4.2K	4.1K	SCK	4.1K	4.3HK	(4.4)SK	AK						
20								4.3H	(4.6)S	(4.5)A	(4.2)S	(4.2)S	SC	SC	(4.1)SC	4.1	SC	(4.3)SC						
21								4.1K	4.1K	(4.2)SK	(4.2)SC	4.4	SC	(4.2)SC	(4.2)SC	(3.6)H	(3.9)C	(4.6)A						
22								4.1	4.1	(4.1)FS	A	4.2	(4.2)SC	(4.2)S	4.2	4.1	3.9	SC						
23								3.8H	4.2	4.0H	(4.1)S	A	B	SC	4.2	4.0	(4.2)S							
24									4.1H	3.9	A	4.2	SC	SC	4.2	B	A	B						
25								A	A	4.1	A	4.3	4.2	SC	4.2	4.2	(4.4)C	A						
26								B	4.3H	(4.3)S	(4.2)S	(4.2)SC	(4.0)C	(4.2)C	(4.4)S	4.2	C	A						
27								4.5	4.4	4.5	(4.0)C	(4.0)C	(4.0)C	4.2	4.2	4.2	(4.2)S							
28								AS	A	A	A	4.4	4.2	4.2	4.3	4.6	4.0							
29								C	SC	4.0	3.9	4.3	4.0	4.2	4.3	4.1	4.0							
30								4.0	A	A	A	A	4.0	4.2	4.1	4.1	4.4							
31								4.2H	(4.4)S	3.9	3.8K	3.9K	F(4.1)CK	4.3K	4.6K	AK	ASK							
Median								4.2	4.2	4.2	4.2	4.3	(4.2)	(4.2)	4.2	4.2	4.2	4.2						
Count								22	24	28	22	21	24	22	28	27	26	19						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

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Table 49

Ionospheric Storminess at Washington, D. C.

October 1948

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	4	4	0600	----	5	4
2	4	4	----	----	5	3
3	2	2	----	0100	3	3
4	2	1			3	3
5	0	1			4	1
6	0	1			1	1
7	1	1			1	2
8	0	1			2	2
9	1	1			1	1
10	4	4	0600	----	4	3
11	4	4	----	2200	3	3
12	1	1			3	2
13	1	1			2	3
14	1	1	2100	----	2	5
15	4	1	----	1000	5	4
16	1	1			1	2
17	1	2	2200	----	2	2
18	5	4	----	----	5	4
19	6	7	----	----	7	3
20	1	1	----	0500	1	3
21	4	3	0200	1500	5	4
22	2	0			3	4
23	2	3			4	3
24	1	2			3	3
25	0	2			2	3
26	2	2			3	3
27	0	3			4	4
28	1	1			3	2
29	0	1			3	2
30	1	1			2	1
31	1	4	1500	----	3	1

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest distrubance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 50

Sudden Ionosphere Disturbances Observed at Washington, D. C.

October 1948

Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
2	1516	1610	Ohio, D.C.	0.1	Terr.mag.pulse** 1528-1535 Solar flare*** 1529
6	1440	1510	Ohio, D.C.	0.1	
6	1533	1610	Ohio, D.C.	0.1	
7	1207	1300	England	0.02	Solar flare*** 1215
7	1553	1650	Ohio, D.C., England	0.01	
9	1013	1050	England	0.05	
9	1650	1710	Ohio, D.C., England	0.05	
10	1719	1735	Ohio, D.C., England, New Brunswick	0.01	
11	1220	1320	Ohio, D.C., England	0.03	
11	1727	1740	Ohio	0.1	
13	1216	1235	England	0.1	
13	1253	1320	Ohio, D.C., England	0.2	
15	2120	2200	Ohio, D.C., England	0.01	
21	1350	1430	Ohio, D.C., England	0.05	Solar flare**** 1405
23	1649	1910	Ohio, D.C., England, New Brunswick	0.1	

*Ratio of received field intensity during SID to average field intensity before and after, for station W8XAL, 6080 kilocycles, 600 kilometers, for all SID except the following: Station GLH, 13525 kilocycles, received in New York, was used for the SID on October 7 at 1207, on October 9 at 1013, and on October 13 at 1216.

**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.

***Time of observation at Meudon Observatory, France.

****Time of observation at McMath-Hulbert Observatory, Michigan.

Table 51

Sudden Ionosphere Disturbances Reported by

RCA Communications, Inc., as Observed

at Point Reyes, California

1948 Day	GCT Beginning	GCT End	Location of transmitters
October 15	2120	2230	Australia, China, Hawaii, Japan, Philippine Is.
18	0040	0100	Java, Philippine Is.
18	0515	0605	Australia, China, Chosen, Japan

Table 52

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Observed in England

1948 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters
October				
5	0614	0730	Somerton	Ceylon, India
6	1228	1245	Brentwood	Bahrein I., Belgian Congo, Canary Is., Greece, Kenya, Portugal, Southern Rhodesia, Switzerland
7	1000	1115	Brentwood	Canary Is., Kenya, Southern Rhodesia, Spain, Zanzibar
7	1225	1300	Brentwood	Austria, Barbados, Belgian Congo, Canary Is., France, Greece, Kenya, Malta, Southern Rhodesia, Spain, Switzerland, Yugoslavia, Zanzibar
7	1228	1310	Somerton	Argentina, Brazil, Union of S. Africa
9	1015	1055	Brentwood	Austria, Bahrein I., Belgian Congo, Canary Is., France, Greece, India, Iran, Kenya, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Trans-Jordan, Turkey, U.S.S.R., Yugoslavia, Zanzibar
9	1017	1045	Somerton	Argentina, Australia, Brazil, Canada, Ceylon, China, Gold Coast, India, Union of S. Africa
11	1215	1345	Brentwood	Afghanistan, Austria, Bahrein I., Barbados, Belgian Congo, Canary Is., Colombia, France, Greece, India, Iran, Madagascar, Malta, Palestine, Portugal, Southern Rhodesia, Spain, Surinam, Switzerland, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
11	1220	1345	Somerton	Argentina, Australia, Barbados, Brazil, Canada, Ceylon, China, Gold Coast, India, New York, Union of S. Africa
13	1210	1230	Brentwood	Canary Is., France, Greece, Kenya, Southern Rhodesia, Spain, Switzerland, Turkey, Yugoslavia, Zanzibar
13	1255	1315	Brentwood	Canary Is., Colombia, France, Kenya, Palestine, Southern Rhodesia, Spain, Turkey

Table 52 (Continued)

1948 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters
October 13	1300	1310	Somerton	Argentina, Brazil, Ceylon, Gold Coast, India, Union of S. Africa

Table 53

Sudden Ionosphere Disturbances Reported by

International Telephone and Telegraph Corporation,

as Observed at Platanos, Argentina

1948 Day	GCT Beginning	GCT End	Location of transmitters
August 1	1612	1625	Bolivia, France, Germany, New York, Spain, Venezuela
5	1335	1400	Brazil, Colombia, England, Germany, New York, Switzerland, Venezuela
September 16	1600	1615	Bolivia, Brazil, Chile, Cuba, Denmark, Germany, Netherlands, New York, Peru, Spain, Venezuela

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Table 54

Provisional Radio Propagation Quality Figures
(Including Comparisons with CRPL Warnings and CRPL Probable Disturbed Period Forecasts)
September 1948

Day	North Atlantic							North Pacific						
	Quality figure		CRPL* Warning		CRPL** Forecast of probable disturbed periods	Geomagnetic K_{Ch}		Quality figure		CRPL* Warning		CRPL** Forecast of probable disturbed periods	Geomagnetic K_{Ch}	
	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT		01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT		01-12 GCT	13-24 GCT
1	(4)	(4)		X		3	4	6	7		X		3	4
2	(3)	5	X	X		5	2	6	5	X	X		5	2
3	(4)	6	X	X		2	3	6	6	X	X		2	3
4	(4)	5	X	X	X	3	3	6	7	X	X	X	3	3
5	5	6	X		X	3	1	7	6	X		X	3	1
6	6	7			X	2	2	7	7			X	2	2
7	6	6			X	3	2	7	6			X	3	2
8	6	6				2	2	7	8				2	2
9	6	6				2	2	6	7				2	2
10	7	7				1	3	8	7				1	3
11	7	6				3	2	8	6				3	2
12	6	6				3	4	7	7				3	4
13	7	7				2	2	7	8				2	2
14	7	7				2	1	7	7				2	1
15	7	6				2	3	7	8				2	3
16	7	6				3	3	6	8				3	3
17	6	7	X			2	2	7	8	X			2	2
18	6	6			X	1	3	7	7			X	1	3
19	5	6			X	3	2	7	7			X	3	2
20	6	6				1	2	7	7				1	2
21	6	6				2	2	7	7				2	2
22	6	7				2	3	7	7				2	3
23	6	6				3	3	6	8				3	3
24	6	6				3	3	7	6				3	3
25	5	5				4	4	5	5				4	4
26	(3)	6				4	3	7	7				4	3
27	6	7				1	1	7	7				1	1
28	7	7				0	0	6	8				0	0
29	6	6			X	4	3	6	7			X	4	3
30	5	6	X	X	X	3	3	6	5	X	X	X	3	3
Score:														
H			4		1					0		0		
M			1		4					0		0		
G			22		18					23		22		
(S)			2		3					2		1		
S			1		4					5		7		

*Broadcast on WWV, Washington, D.C. Times of warnings recorded to nearest half day as broadcast.

**In addition to dates marked X, the following was designated as a probable disturbed day on forecasts more than eight days in advance of said date: September 28.

Quality Figure Scale:
1 - Useless
2 - Very poor
3 - Poor
4 - Poor to fair
5 - Fair
6 - Fair to good
7 - Good
8 - Very good
9 - Excellent

Symbols:

- X — Warning given or probable disturbed date
- H — Quality 4 or worse on day or half day of warning
- M — Quality 4 or worse on day or half day of no warning
- G — Quality 5 or better on day of no warning
- (S) — Quality 5 on day of warning
- S — Quality 6 or better on day of warning
- ( ) — Quality 4 or worse (disturbed)

Geomagnetic K_{Ch} on the standard scale of 0 to 9, 9 representing the greatest disturbance

Table 55

American and Zürich Provisional Relative Sunspot Numbers

October 1948

Date	R_A*	R_Z**	Date	R_A*	R_Z**
1	155	118	16	213	205
2	144	139	17	208	192
3	122	106	18	174	179
4	139	96	19	181	162
5	124	95	20	208	147
6	95	70	21	241	174
7	77	66	22	213	188
8	95	68	23	201	159
9	102	90	24	167	158
10	149	117	25	144	102
11	192	164	26	143	101
12	222	175	27	140	106
13	273	200	28	133	111
14	288	222	29	149	115
15	240	197	30	114	108
			31	108	101
			Mean:	166.3	136.5

*Combination of 43 observers; see page 8.

**Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 56a

Coronal observations at Climax, Colorado (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																		P
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
1948																																						
Oct. 1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	4	7	9	9	-	5	7	5	4	6	-	-	-	X	X	X	X	X	X	ƒ25
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	8	9	12	6	4	4	3	3	6	6	5	-	-	-	-	-	-	-	ƒ25
3.7	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	8	10	7	5	-	-	-	-	-	-	-	X	X	X	X	X	X	ƒ25
7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	14	12	14	15	14	13	15	15	13	12	10	8	5	3	2	2	-	-	-	-	-	ƒ25
8.6	-	-	-	-	-	-	-	-	-	4	5	5	5	3	3	15	21	16	17	17	17	20	23	20	18	14	14	12	7	5	3	-	-	-	-	-	-	ƒ25
9.7	-	-	-	-	-	-	-	-	-	7	8	9	9	10	11	10	14	26	22	20	21	23	22	20	14	18	16	16	15	8	5	8	6	3	-	-	-	ƒ25
10.6	-	-	-	-	-	-	-	3	4	5	7	9	11	12	17	26	22	20	20	18	16	20	22	22	13	13	11	10	8	7	5	5	-	-	-	-	-	ƒ25
12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	8	13	14	15	20	22	22	23	20	20	15	13	11	12	10	9	8	9	8	-	-	-	-	-	ƒ25
13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	18	16	18	13	12	13	15	18	16	10	7	6	5	-	-	-	-	-	-	-	-	-	ƒ25
14.6	-	-	-	-	-	-	-	-	-	-	-	-	5	6	8	14	12	10	11	13	18	22	25	23	15	9	8	4	3	3	4	4	3	2	-	-	-	ƒ25
15.7	X	X	X	X	X	-	-	-	-	-	-	-	-	3	8	10	10	7	8	10	15	17	18	12	10	7	5	6	-	-	-	-	-	-	-	-	-	ƒ25
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6	10	9	8	11	11	12	14	15	15	14	12	5	3	5	4	3	4	5	4	3	-	-	ƒ25
18.6	-	-	-	-	-	-	-	-	-	2	3	7	9	11	12	13	13	13	13	9	14	15	13	11	8	7	4	4	5	4	3	5	-	-	-	-	-	ƒ25
20.7	-	-	-	-	-	-	-	-	-	-	-	5	9	10	10	11	9	8	5	3	9	10	12	3	3	3	-	-	-	-	-	-	-	-	-	-	-	ƒ25
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	10	10	9	-	-	6	8	9	10	7	5	5	-	-	-	-	-	-	-	-	-	-	ƒ25
23.8	-	-	-	-	-	-	-	-	-	-	-	-	3	4	4	6	7	9	10	10	12	11	9	11	11	8	8	7	4	3	-	-	-	-	-	-	-	ƒ25
24.6	-	-	-	-	-	-	-	-	-	2	2	-	5	5	3	12	14	14	13	14	13	10	10	11	10	10	9	7	5	4	4	5	5	5	4	2	-	ƒ25
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	10	13	12	11	10	10	10	11	7	8	9	10	9	7	4	4	2	3	3	2	2	-	ƒ25
26.8	-	-	-	-	-	-	-	-	-	-	-	2	2	9	9	12	13	14	10	9	8	8	9	9	8	9	10	10	9	5	5	-	-	-	-	-	-	ƒ25
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	6	9	11	15	17	16	15	13	13	12	10	9	8	7	5	3	-	-	-	-	-	-	-	-	ƒ25
31.7	-	2	2	-	-	-	2	2	3	-	-	-	-	-	12	12	14	17	18	22	30	35	40	20	13	10	7	9	10	10	6	3	X	X	X	X	X	ƒ25

Table 57a

Coronal observations at Climax, Colorado (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																		P
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
1948																																						
Oct. 1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	6	10	-	-	-	-	-	-	-	-	X	X	X	X	X	X	ƒ25
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	11	5	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
3.7	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	8	8	1	-	-	-	-	-	-	-	X	X	X	X	X	X	ƒ25
7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	5	3	2	1	1	1	4	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	5	7	6	1	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
9.7	1	1	1	1	1	1	1	11	11	1	1	3	6	7	-	-	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
10.6	-	-	-	-	-	-	-	-	-	-	-	1	2	2	3	5	13	12	3	1	2	10	5	1	-	3	2	1	-	-	-	-	-	-	-	-	-	ƒ25
12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	8	8	8	13	14	1	10	8	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
13.6	-	-	-	-	-	-	-	-	-	1	1	1	1	1	3	14	13	10	15	1	1	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
14.6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	11	10	3	5	4	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
15.7	X	X	X	X	X	-	-	-	-	-	-	1	2	3	4	5	6	6	3	1	1	3	10	9	3	2	1	-	-	-	-	-	-	-	-	-	-	ƒ25
17.6	-	-	1	1	1	1	1	1	1	1	2	3	3	4	5	5	3	1	-	-	2	7	8	8	8	1	1	1	1	-	-	-	-	-	-	-	-	ƒ25
18.6	-	-	-	-	1	2	2	2	3	2	1	1	-	1	3	4	2	1	1	-	-	1	3	3	1	1	1	-	-	-	-	-	-	-	-	-	-	ƒ25
20.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1	3	5	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-	ƒ25
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	3	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
24.6	-	-	-	-	-	-	-	1	1	-	-	-	1	1	3	4	1	-	-	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
25.6	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
26.8	-	-	-	-	-	-	-	1	1	1	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	12	8	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
31.7	1	1	1	1	1	1	1	1	1	-	1	4	5	5	6	-	1	11	8	9	10	10	5	1	3	-	-	-	1	1	1	1	X	X	X	X	X	ƒ25

Table 56b

Coronal observations at Climax, Colorado (5303A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																		P
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
1948																																						
Oct. 1.8	X	X	X	X	X	-	-	-	-	-	-	-	-	6	7	11	8	5	-	-	-	-	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	≮25
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	6	9	10	12	11	8	6	5	9	10	5	-	-	-	-	-	-	-	-	-	-	-	-	-	≮25
3.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	≮25
7.9	-	-	-	-	-	-	-	-	-	-	-	5	9	14	13	10	12	12	8	10	13	14	11	13	13	7	3	-	-	-	-	-	-	-	-	-	-	≮25
8.6	-	-	-	-	-	-	-	-	-	5	5	8	15	16	15	13	13	13	15	16	17	17	16	14	15	13	5	-	-	-	-	-	-	-	-	-	-	≮25
9.7	-	-	-	-	4	5	5	5	5	10	12	12	11	13	13	13	13	13	16	15	15	15	15	15	15	13	10	5	-	-	-	-	-	-	-	-	-	≮25
10.6	-	-	-	-	-	3	5	5	6	10	11	11	12	11	11	12	13	13	16	18	19	16	12	10	8	6	5	4	3	-	-	-	-	-	-	-	-	≮25
12.6	-	-	-	-	2	3	5	5	6	7	9	13	12	12	11	11	12	12	10	12	16	18	15	13	11	7	5	6	3	3	-	-	-	-	-	-	-	≮25
13.6	-	-	-	-	-	-	-	-	-	3	4	4	4	-	-	-	-	-	5	5	9	11	10	8	4	-	-	-	-	-	-	-	-	-	-	-	-	≮25
14.6	-	-	-	-	-	3	4	7	10	10	9	9	8	9	10	11	12	10	8	5	9	12	10	9	8	8	5	3	2	-	-	-	-	-	-	-	-	≮25
15.7	-	-	-	-	2	3	5	9	10	10	10	9	8	10	12	15	20	16	12	8	5	9	11	8	3	4	5	5	4	4	3	X	X	X	X	X	X	≮25
17.6	-	-	-	-	-	-	3	4	15	13	10	9	11	18	16	18	22	23	20	18	16	15	14	12	-	-	-	-	-	-	-	-	-	-	-	-	-	≮25
18.6	-	-	-	-	2	3	5	10	12	14	11	9	-	-	20	34	38	30	33	25	22	20	19	19	15	15	-	-	-	-	-	5	5	4	3	-	-	≮25
20.7	-	-	-	-	-	-	5	5	10	12	10	10	10	33	38	38	37	35	32	30	25	22	25	10	9	5	3	3	-	-	-	-	-	-	-	-	-	≮25
21.9	-	-	-	-	-	-	-	-	-	-	-	6	9	11	14	22	20	19	18	15	13	12	10	6	-	-	-	-	-	-	-	-	-	-	-	-	-	≮25
23.8	-	-	-	-	-	-	-	4	5	7	9	13	15	17	16	16	18	18	17	19	19	18	18	17	10	6	-	-	-	-	-	-	-	-	-	-	-	≮25
24.6	-	-	-	2	2	2	3	3	3	2	11	13	13	17	16	15	12	11	16	20	19	27	26	31	25	18	10	8	7	7	7	4	-	-	-	-	-	≮25
25.6	-	-	-	-	-	-	3	5	5	4	7	13	14	15	16	20	25	13	17	20	20	23	28	30	22	11	10	8	5	3	2	-	-	-	-	-	-	≮25
26.8	-	-	-	-	5	5	4	5	4	5	5	9	12	13	15	20	23	24	13	15	14	13	15	18	11	8	5	3	-	-	-	-	-	-	-	-	-	≮25
29.8	-	-	-	-	-	-	-	-	-	-	-	-	7	10	12	28	27	23	20	15	12	10	8	5	3	-	-	-	-	-	-	-	-	-	-	-	-	≮25
31.7	X	X	X	X	4	5	5	7	5	7	8	7	8	12	22	43	41	31	28	25	25	14	14	14	11	8	7	6	3	-	-	-	2	3	2	2	-	≮25

Table 57b

Coronal observations at Climax, Colorado (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																		P
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
1948																																						
Oct. 1.8	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	5	10	2	-	-	-	-	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	≮25
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	12	2	1	-	-	1	8	3	1	-	-	-	-	-	-	-	-	-	-	-	-	≮25
3.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	≮25
7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	-	2	4	9	1	-	8	10	-	-	-	-	-	-	-	-	-	-	-	≮25
8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	13	11	13	-	3	11	2	-	-	-	-	-	-	-	-	-	-	≮25
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	1	2	2	6	12	5	2	8	8	3	2	1	1	1	1	1	1	1	1	≮25
10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	≮25
12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	≮25
13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	≮25
14.6	-	-	-	-	-	1	1	1	-	-	-	-	-	-	1	3	1	-	1	1	1	2	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1	≮25
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	10	1	1	1	2	2	1	-	-	-	1	1	-	-	-	X	X	X	X	X	X	≮25
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	7	9	10	5	8	4	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	≮25
18.6	-	1	1	1	2	1	1	1	-	-	-	-	1	2	2	-	5	5	2	1	1	1	5	8	10	2	1	-	-	-	-	-	-	-	-	-	-	≮25
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	8	5	2	3	1	-	-	3	8	14	5	1	-	-	-	-	-	-	-	-	-	-	≮25
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	≮25
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	4	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	≮25
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	3	4	10	7	7	10	10	1	-	-	-	-	-	-	-	-	-	-	-	-	≮25
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	4	8	12	13	10	8	7	1	1	-	-	-	-	-	-	-	-	-	-	-	≮25
26.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	11	1	10	11	14	12	3	1	-	-	-	-	-	-	-	-	-	-	-	-	≮25
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	3	14	16	10	8	8	2	5	3	-	8	8	8	8	5	-	-	-	-	-	-	-	-	-	≮25
31.7	X	X	X	X	-	-	-	-	-	1	1	2	-	1	10	30	22	12	5	1	1	3	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	≮25

Table 58a

Coronal observations at Climax, Colorado (6704A), east limb

Date GCT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																		P
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
1948																																						
Oct. 1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	ƒ25
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
3.7	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	ƒ25
7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	2	2	3	3	5	4	4	4	1	1	-	-	-	-	-	-	-	-	-	ƒ25
8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	3	2	2	3	3	4	5	5	5	4	4	-	-	-	-	-	-	-	-	-	-	ƒ25
9.7	-	-	-	-	-	-	-	-	-	-	-	1	2	2	3	3	3	3	3	3	3	3	3	3	2	2	1	1	-	-	-	-	-	-	-	-	-	ƒ25
10.6	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	3	3	3	3	2	1	2	2	2	2	2	1	-	-	-	-	-	-	-	-	-	-	ƒ25
12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	2	2	2	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	ƒ25
13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
15.7	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
26.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ƒ25
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	2	2	2	2	1	-	-	-	-	-	-	-	-	X	X	X	X	X	ƒ25

Table 58b

Coronal observations at Climax, Colorado (6704A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																		P
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
1948																																						
Oct. 1.8	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	∠25
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
3.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	∠25
7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	∠25
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
18.6	-	-	-	-	-	-	-	-	-	-	-	1	1	3	2	2	2	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	4	4	4	4	4	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
23.8	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	2	2	2	2	2	3	3	3	3	2	1	1	-	-	-	-	-	-	-	-	-	-	∠25
24.6	-	-	-	-	-	-	-	-	-	-	1	1	1	2	2	2	2	2	2	3	3	4	6	5	5	1	-	-	-	-	-	-	-	-	-	-	-	∠25
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	2	1	2	3	3	2	4	4	1	-	-	-	-	-	-	-	-	-	-	-	-	∠25
26.8	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	3	3	2	2	2	2	2'	2	2	2	2	1	1	-	-	-	-	-	-	-	-	∠25
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	3	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25
31.7	X	X	X	X	-	-	-	-	-	-	-	-	-	-	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	∠25

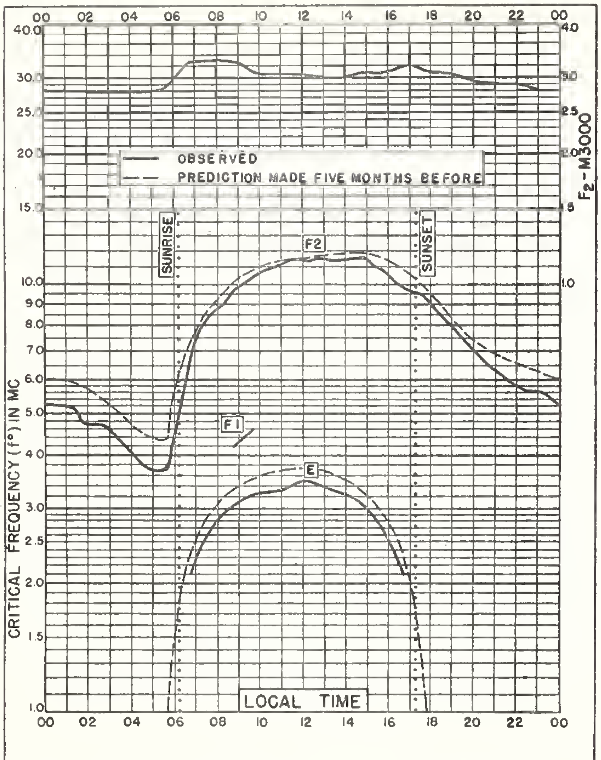

Fig. 1. WASHINGTON, D.C.
39.0°N, 77.5°W OCTOBER 1948

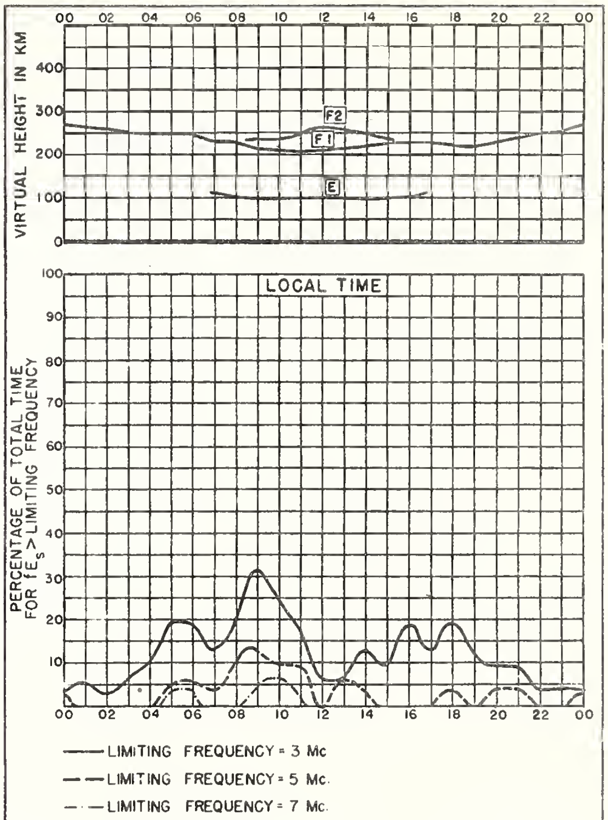

Fig. 2. WASHINGTON, D.C. OCTOBER 1948

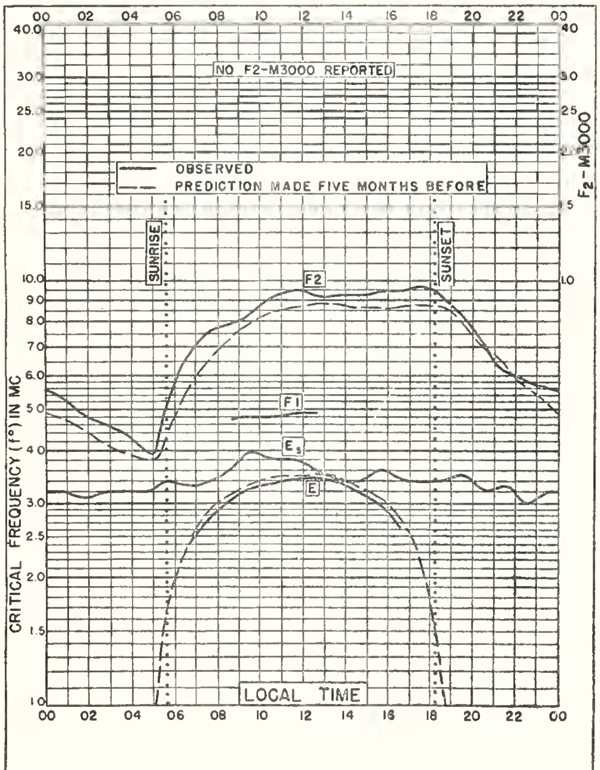

Fig. 3. LINDAU/ HARZ, GERMANY
51.6°N, 10.1°E SEPTEMBER 1948

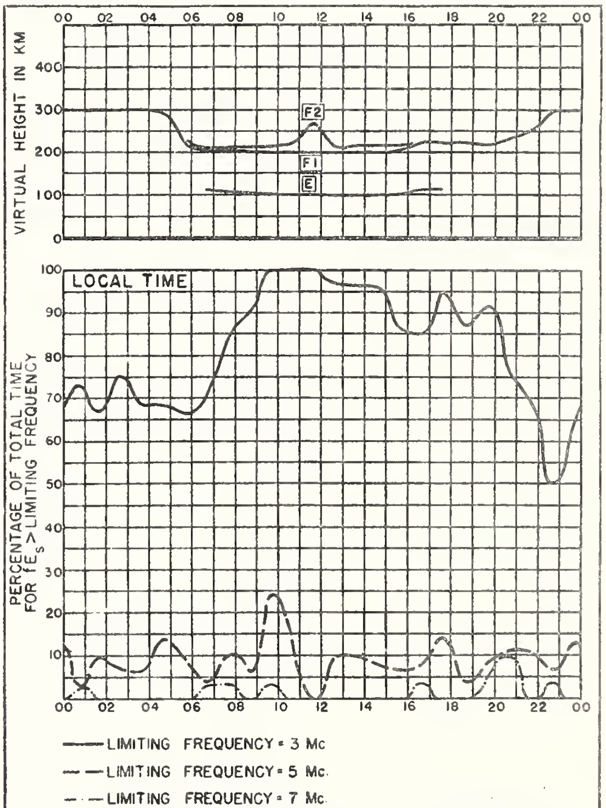

Fig 4. LINDAU/HARZ, GERMANY SEPTEMBER 1948

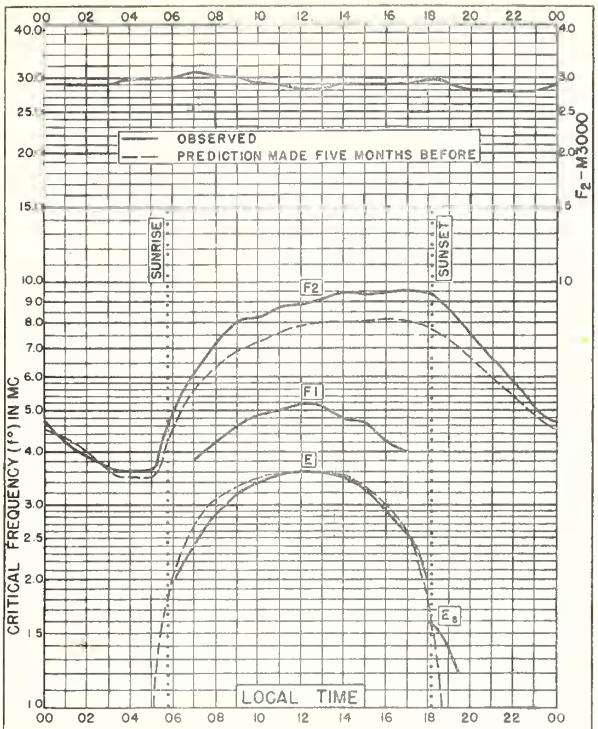

Fig. 5 ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W SEPTEMBER 1948

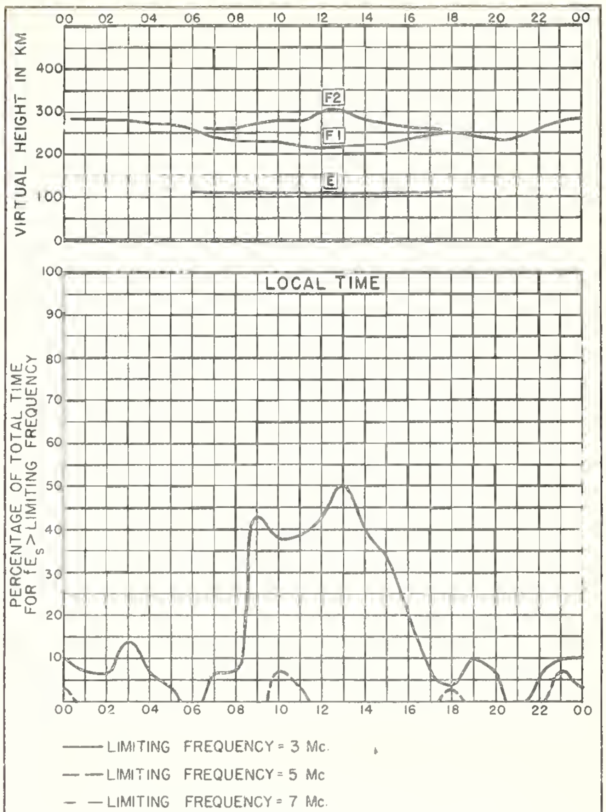

Fig. 6 ST. JOHN'S, NEWFOUNDLAND SEPTEMBER 1948

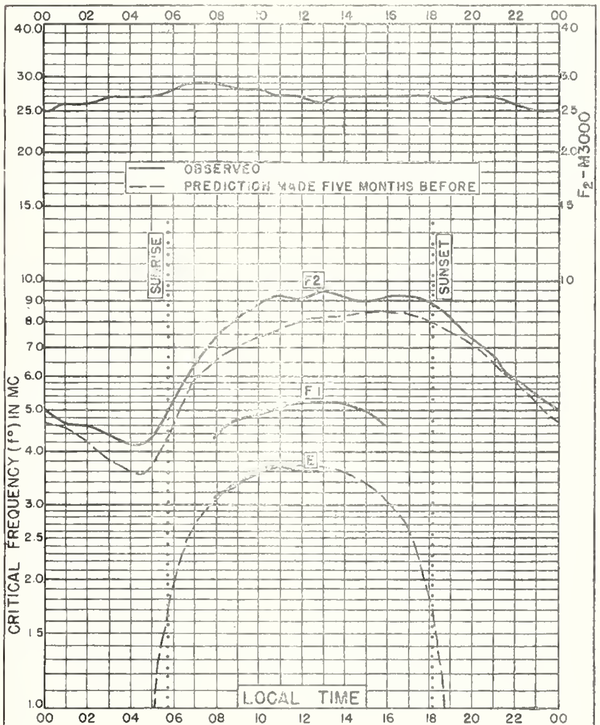

Fig. 7. OTTAWA, CANADA
45.5°N, 75.8°W SEPTEMBER 1948

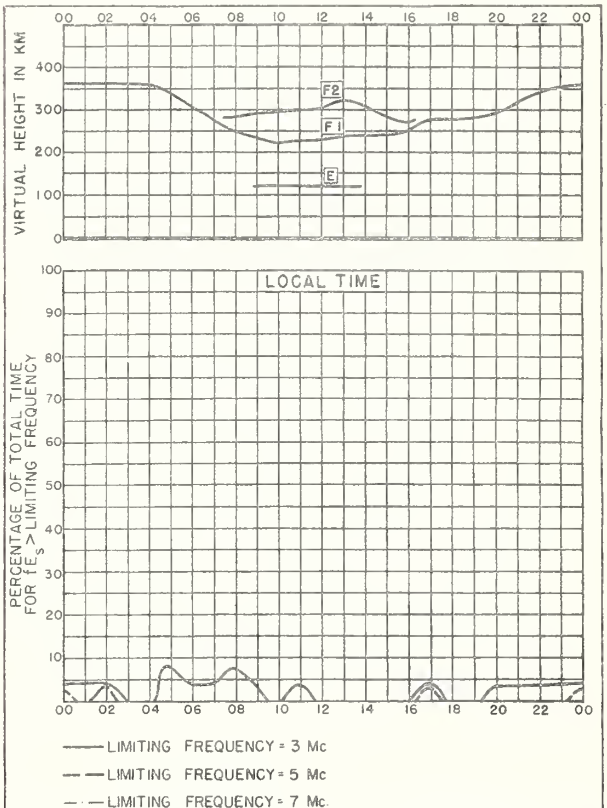

Fig. 8. OTTAWA, CANADA SEPTEMBER 1948

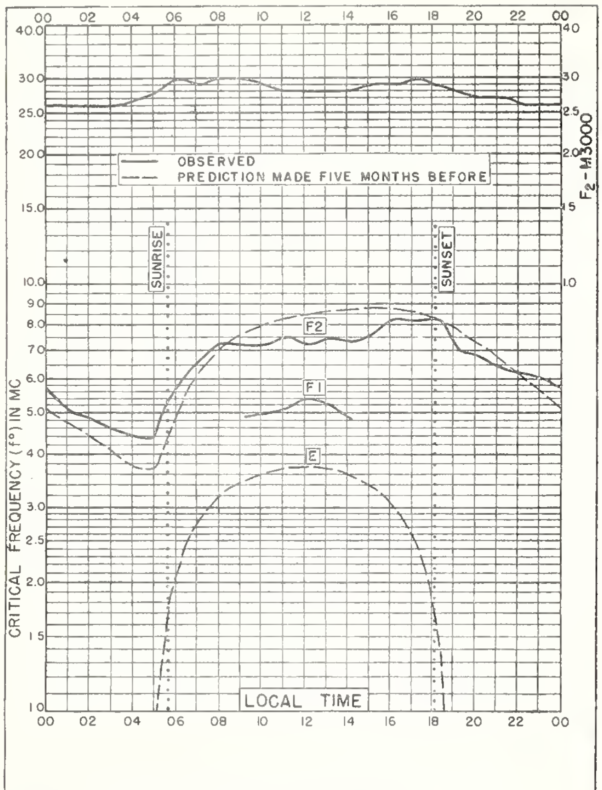

Fig. 9. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W SEPTEMBER 1948

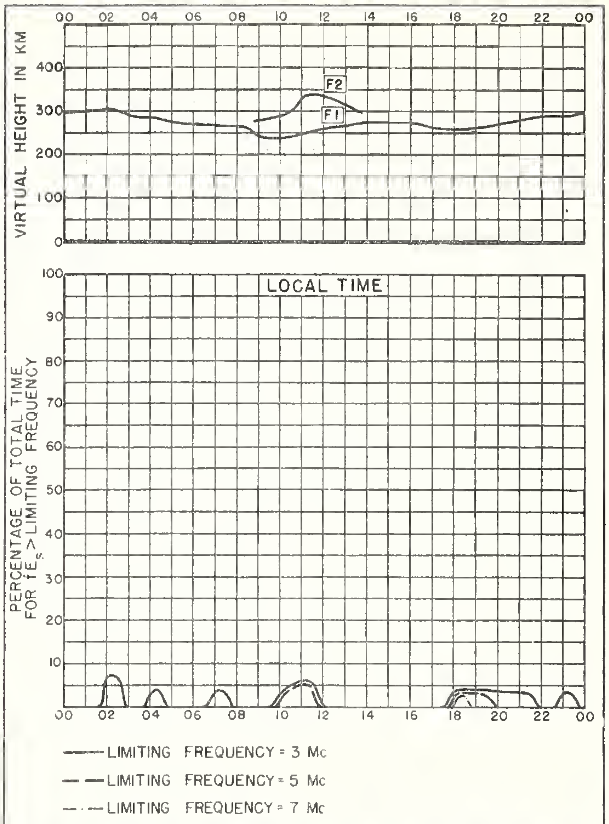

Fig. 10. BOSTON, MASSACHUSETTS SEPTEMBER 1948

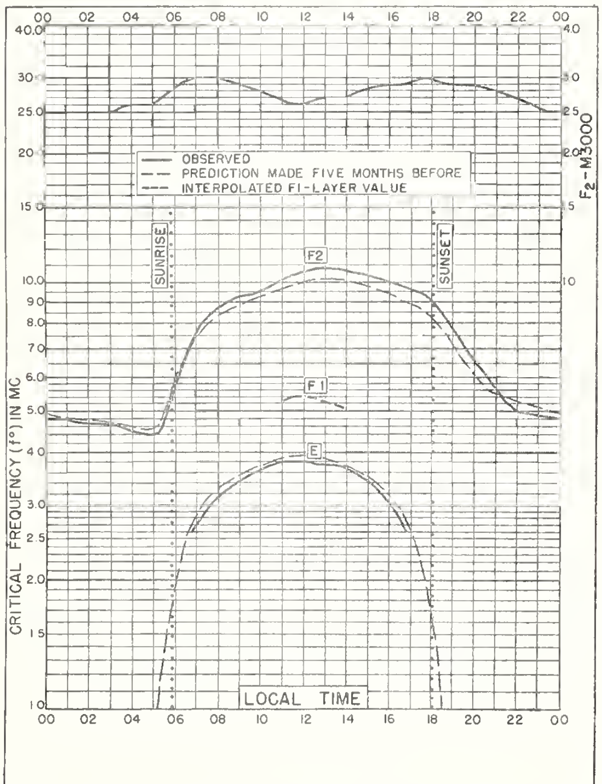

Fig. 11. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W SEPTEMBER 1948

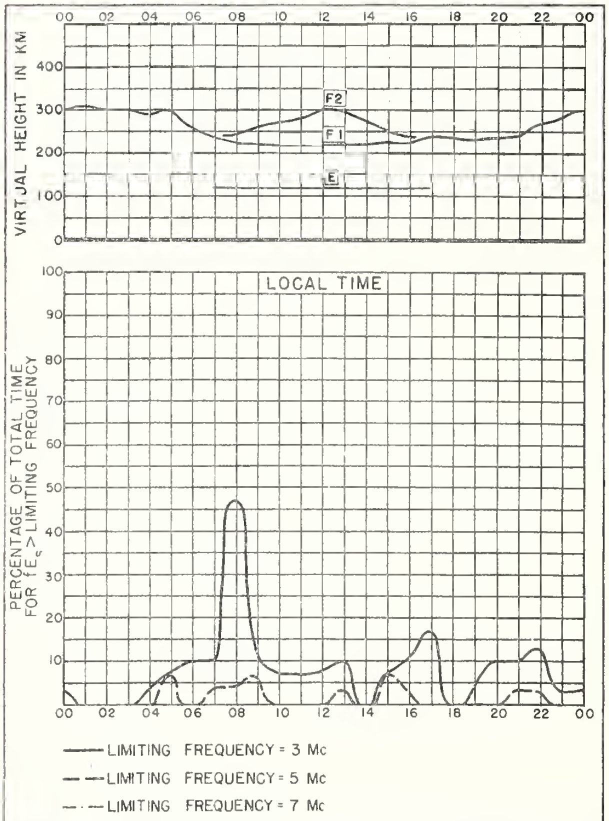

Fig. 12. SAN FRANCISCO, CALIFORNIA SEPTEMBER 1948

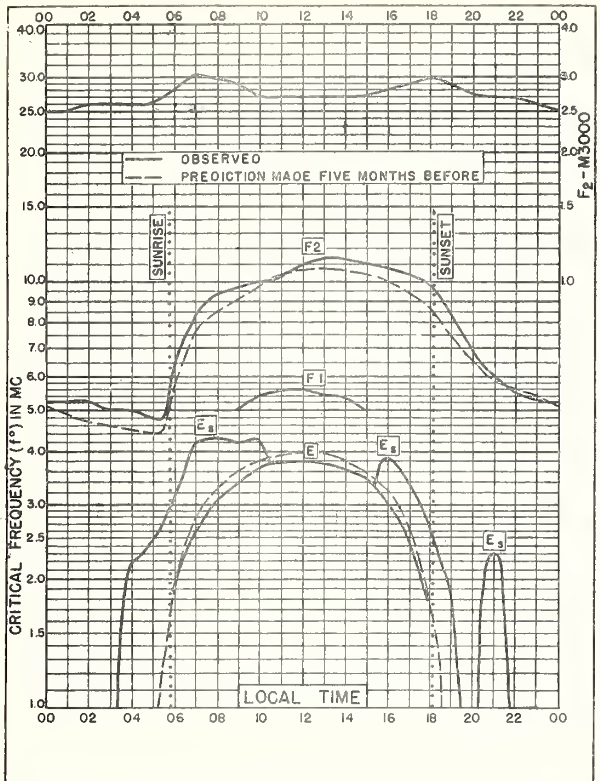

Fig. 13. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W SEPTEMBER 1948

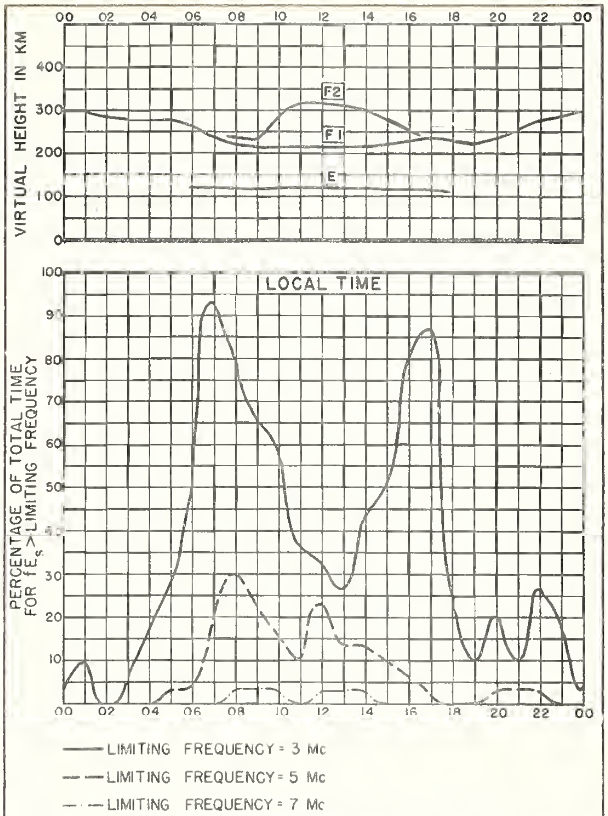

Fig. 14. WHITE SANDS, NEW MEXICO SEPTEMBER 1948

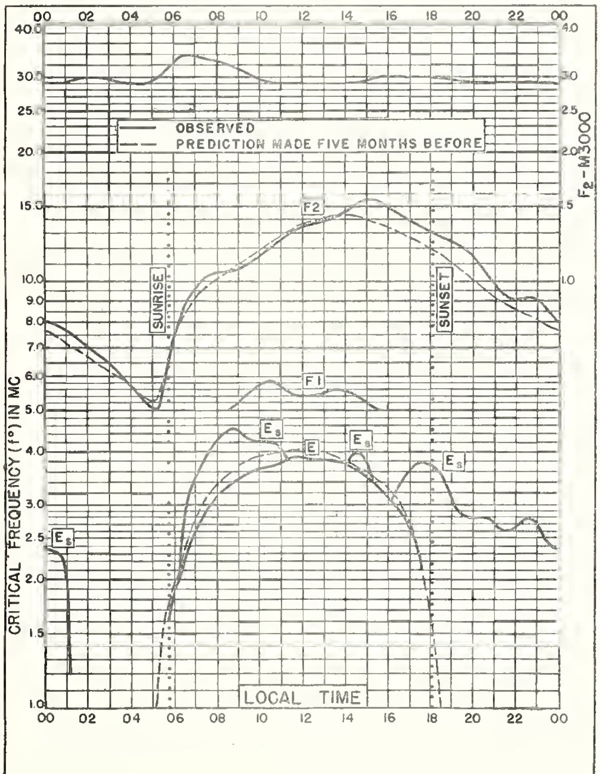

Fig. 15. WUCHANG, CHINA
30.6°N, 114.4°E SEPTEMBER 1948

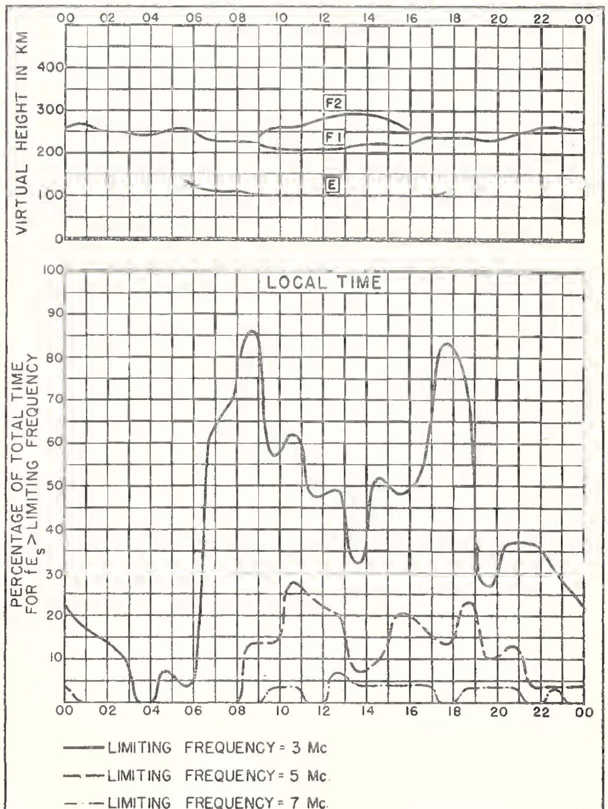

Fig. 16. WUCHANG, CHINA SEPTEMBER 1948

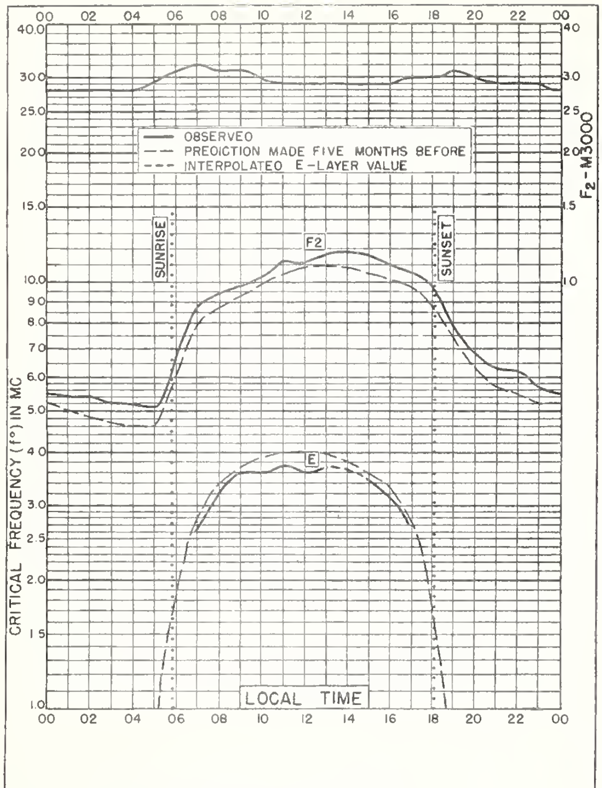

Fig. 17. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W SEPTEMBER 1948

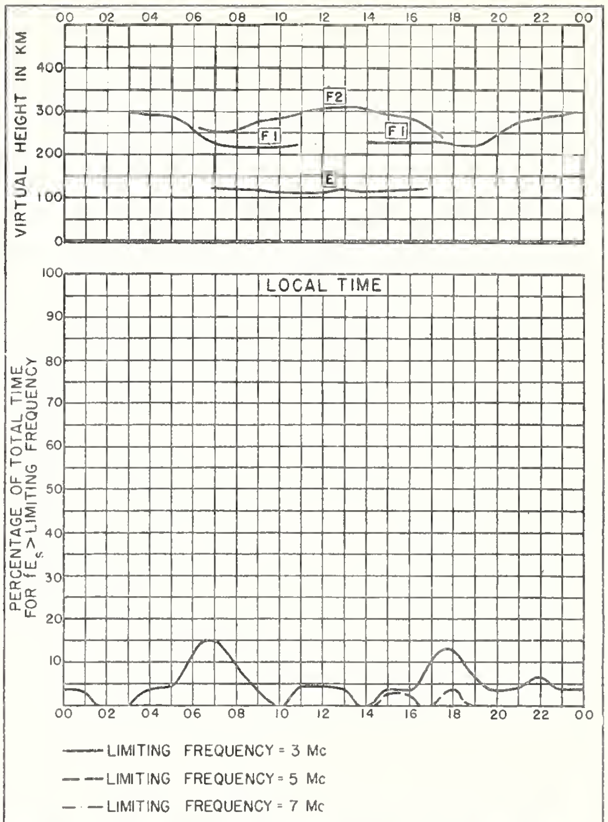

Fig. 18. BATON ROUGE, LOUISIANA SEPTEMBER 1948

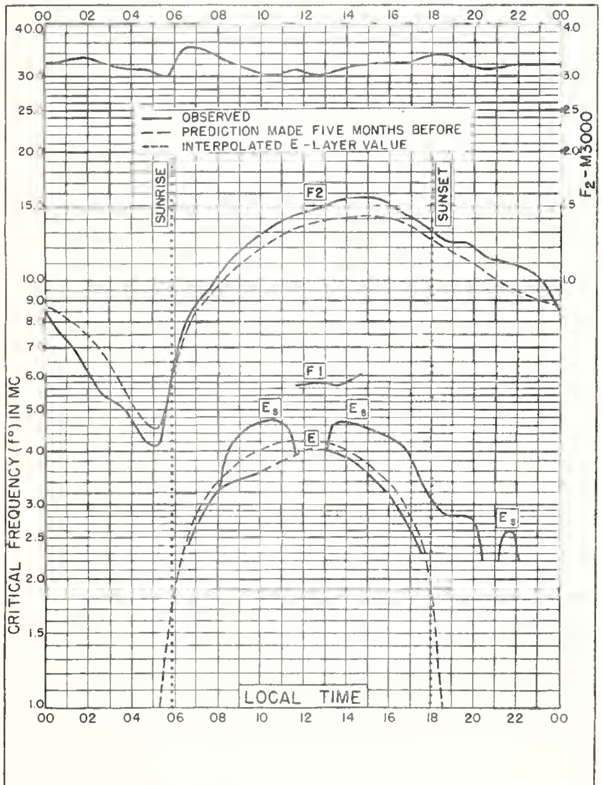

Fig. 19. MAUI, HAWAII
20.8°N, 156.5°W SEPTEMBER 1948

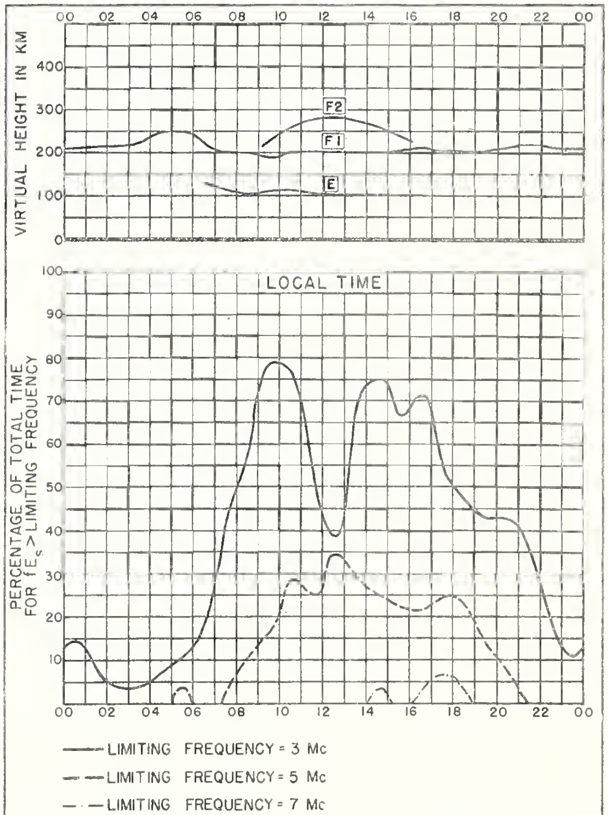

Fig. 20. MAUI, HAWAII SEPTEMBER 1948

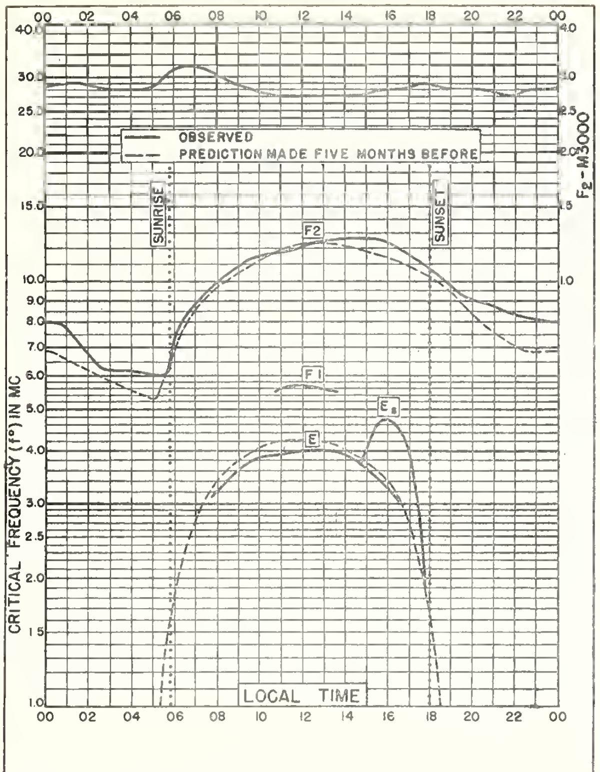

Fig. 21. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W SEPTEMBER 1948

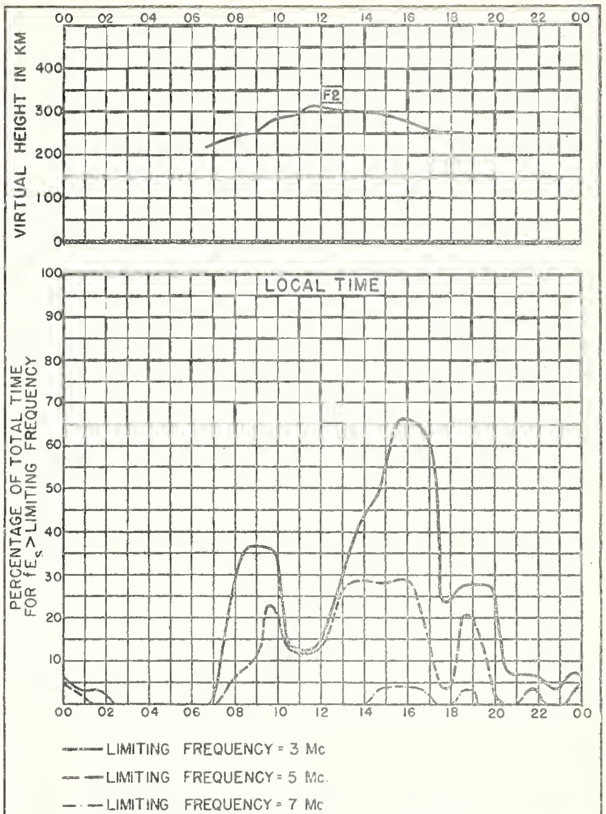

Fig. 22. SAN JUAN, PUERTO RICO SEPTEMBER 1948

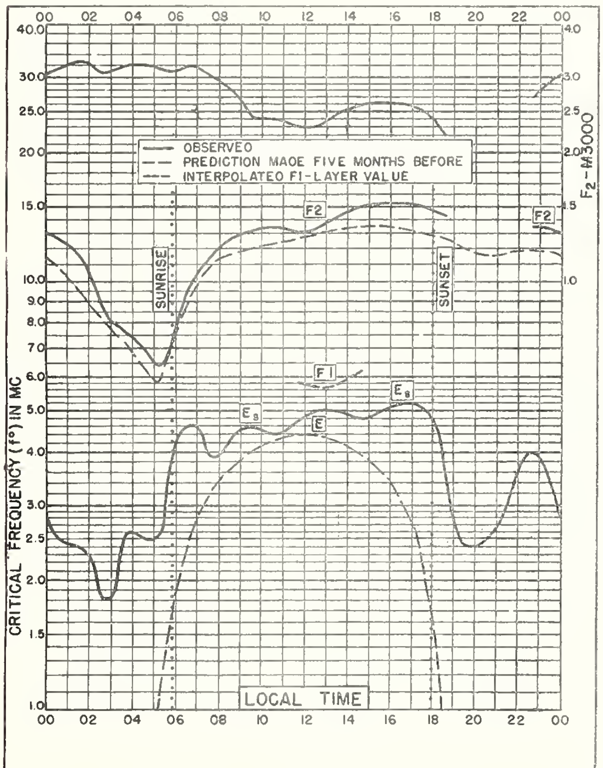

Fig. 23. GUAM I.
13.6°N, 144.9°E SEPTEMBER 1948

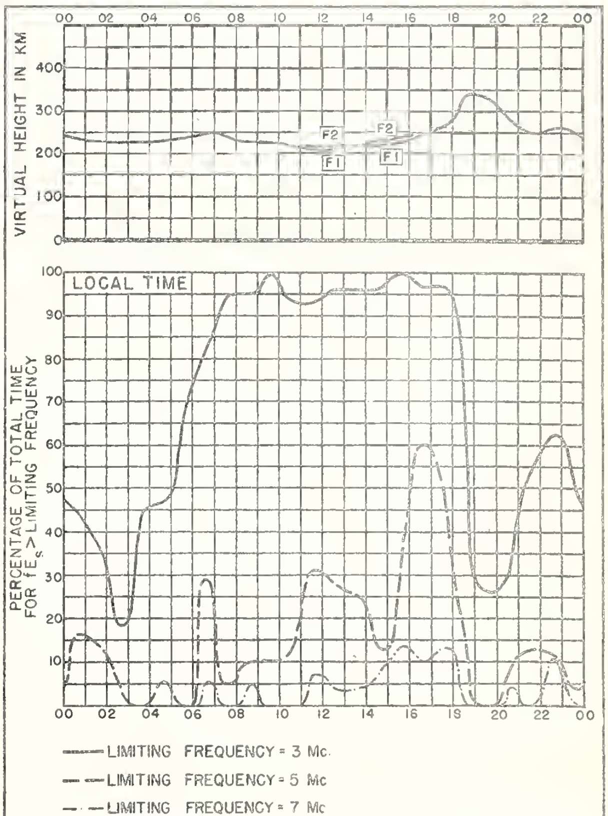

Fig. 24. GUAM I. SEPTEMBER 1948

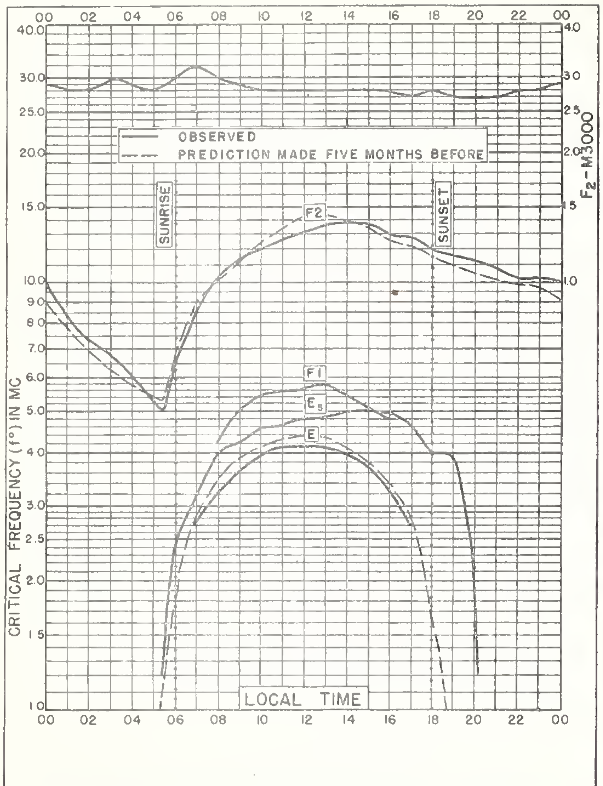

Fig. 25. TRINIDAD, BRIT. WEST INDIES
10. 6°N, 61. 2°W SEPTEMBER 1948

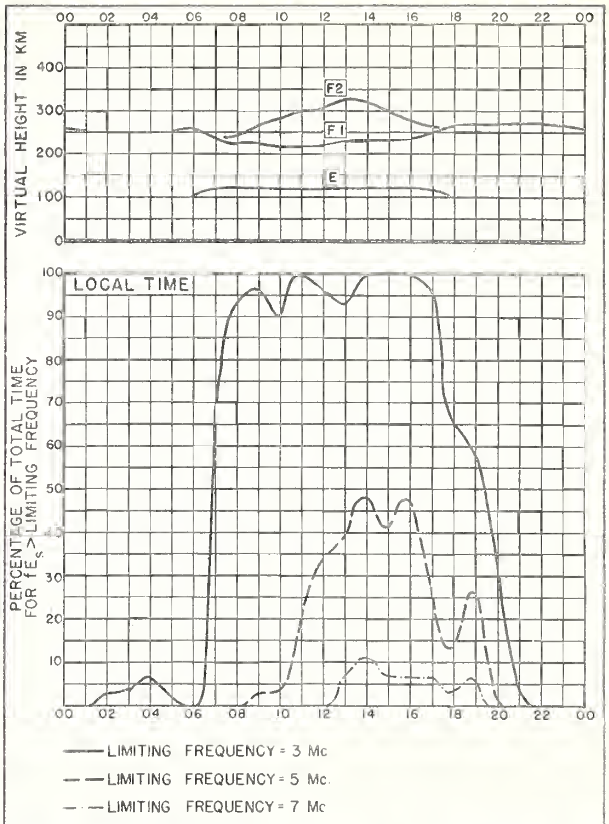

Fig. 26. TRINIDAD, BRIT. WEST INDIES SEPTEMBER 1948

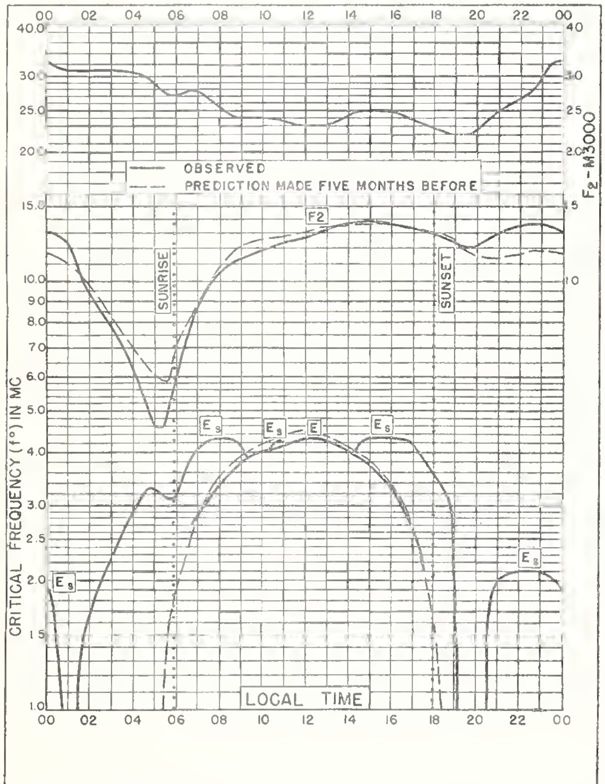

Fig. 27 PALMYRA I.
5.9°N 162.1°W SEPTEMBER 1948

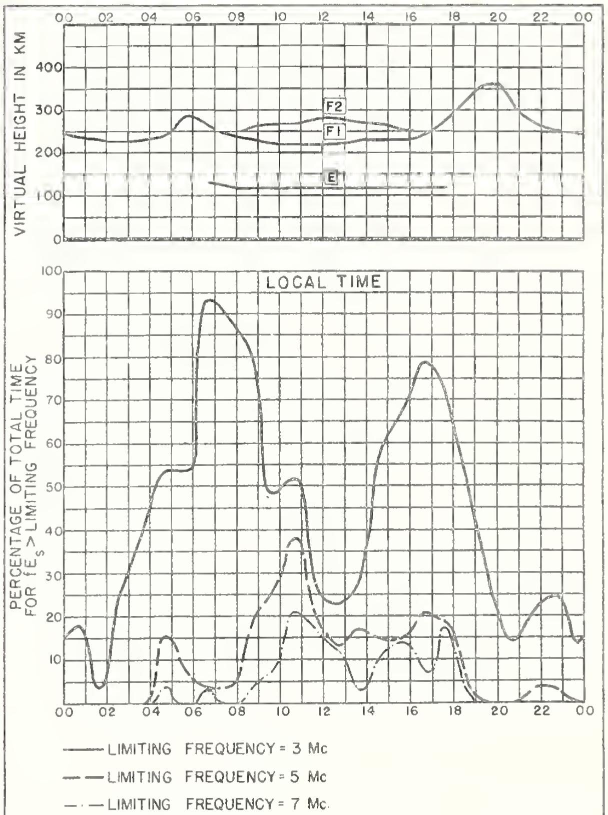

Fig. 28. PALMYRA I. SEPTEMBER 1948

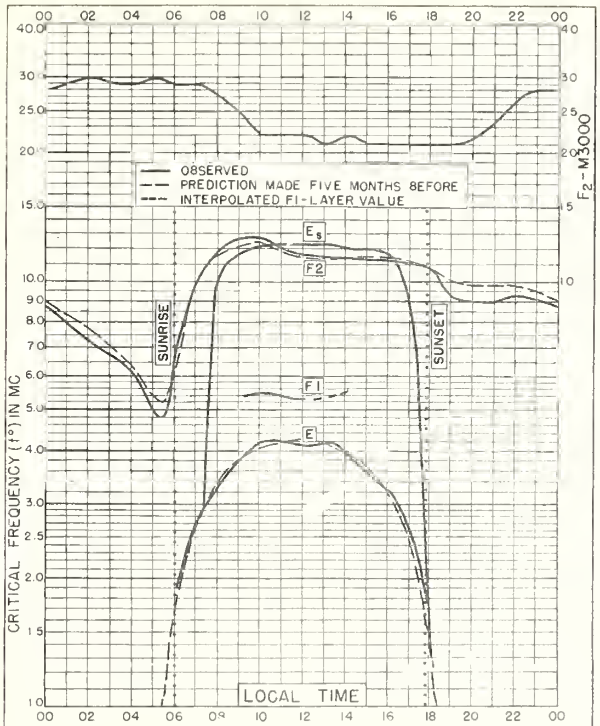

Fig. 29. HUANCAYO, PERU
12.0°S, 75.3°W SEPTEMBER 1948

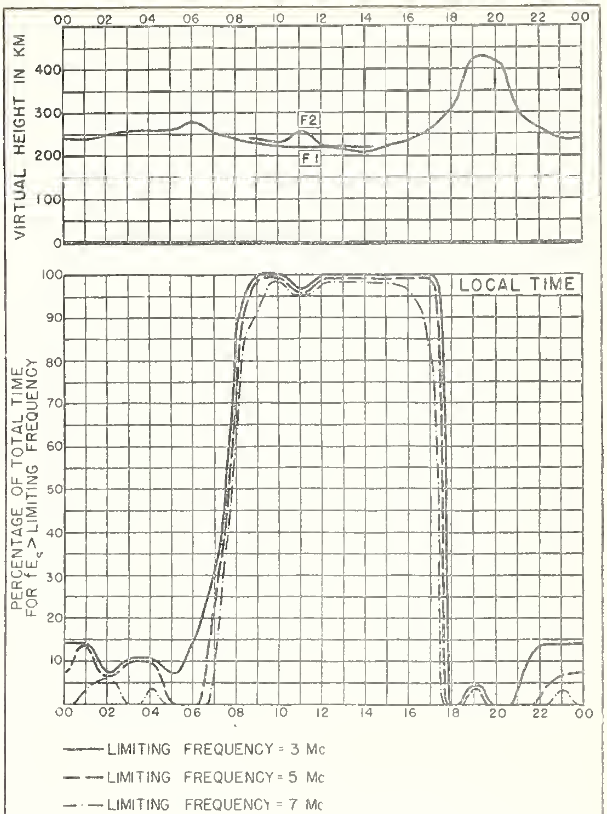

Fig. 30. HUANCAYO, PERU SEPTEMBER 1948

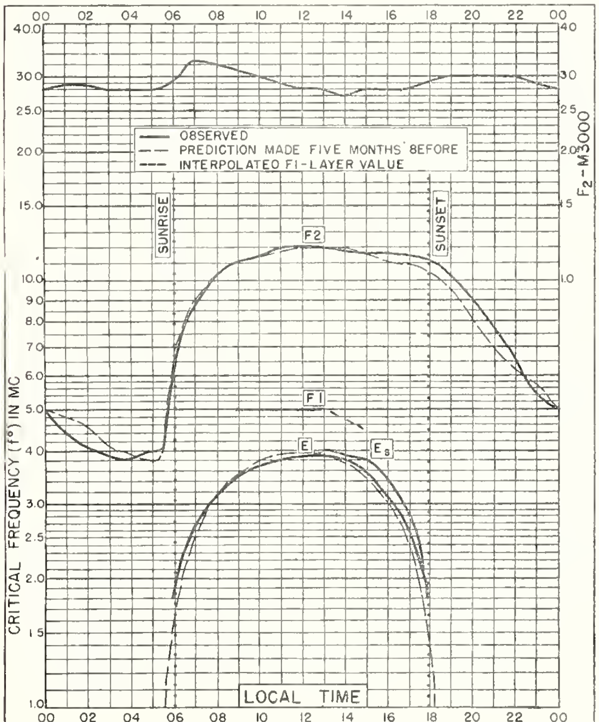

Fig. 31. JOHANNESBURG, U. OF S. AFRICA
26.2°S, 28.0°E SEPTEMBER 1948

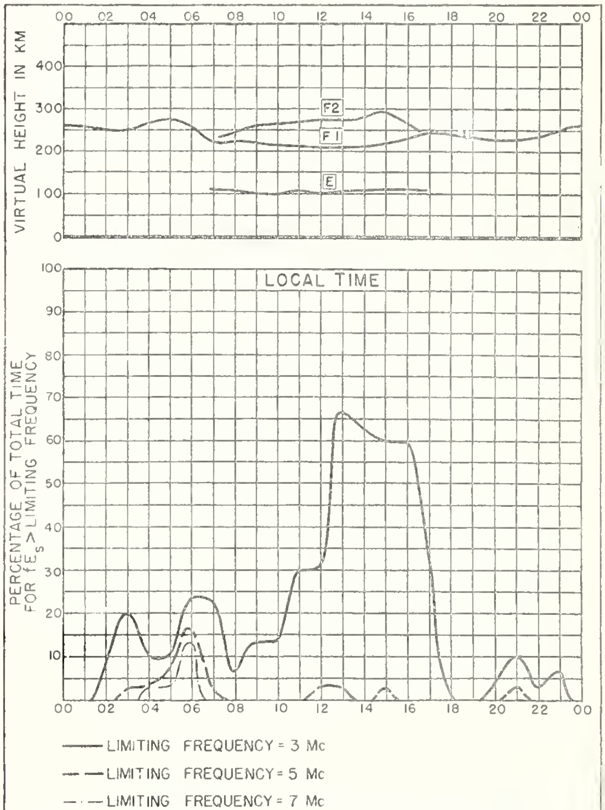

Fig. 32. JOHANNESBURG, U. OF S. AFRICA SEPTEMBER 1948

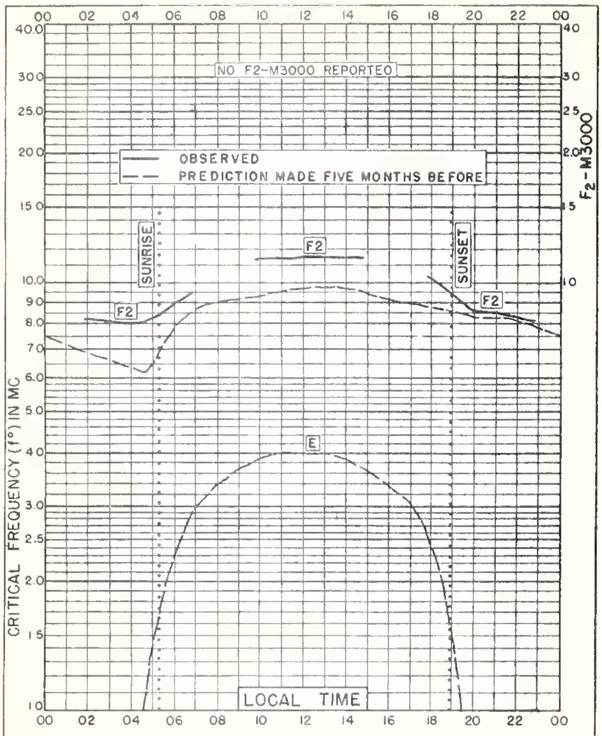

Fig. 33. PEIPING, CHINA
39.9°N, 116.4°E AUGUST 1948

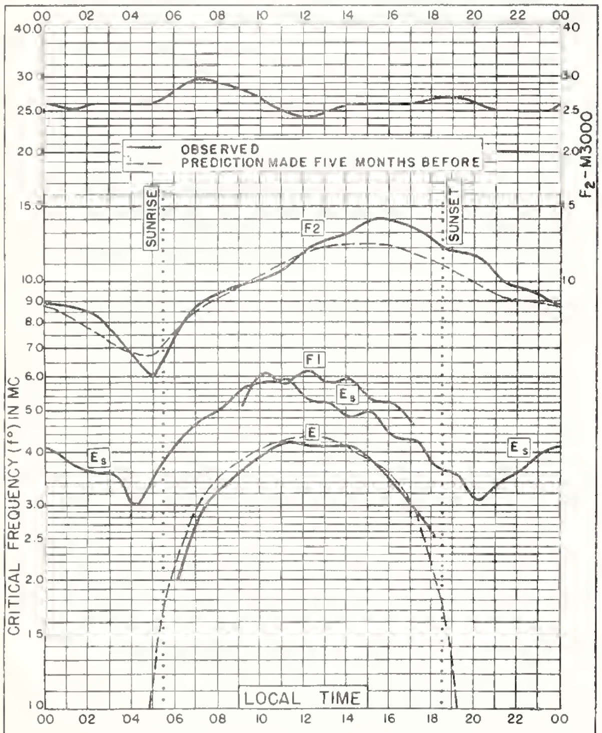

Fig 34. CHUNGKING, CHINA
29.4°N, 106.8°E AUGUST 1948

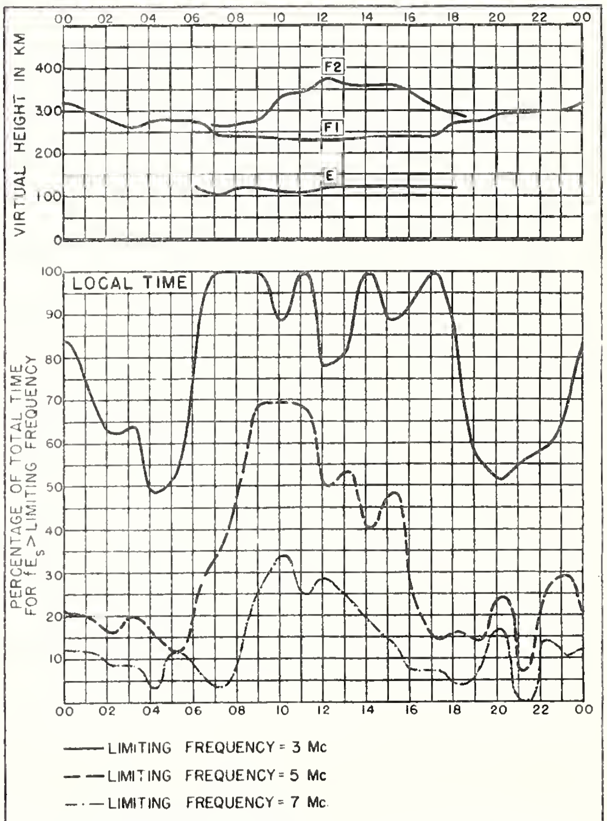

Fig 35. CHUNGKING, CHINA AUGUST 1948

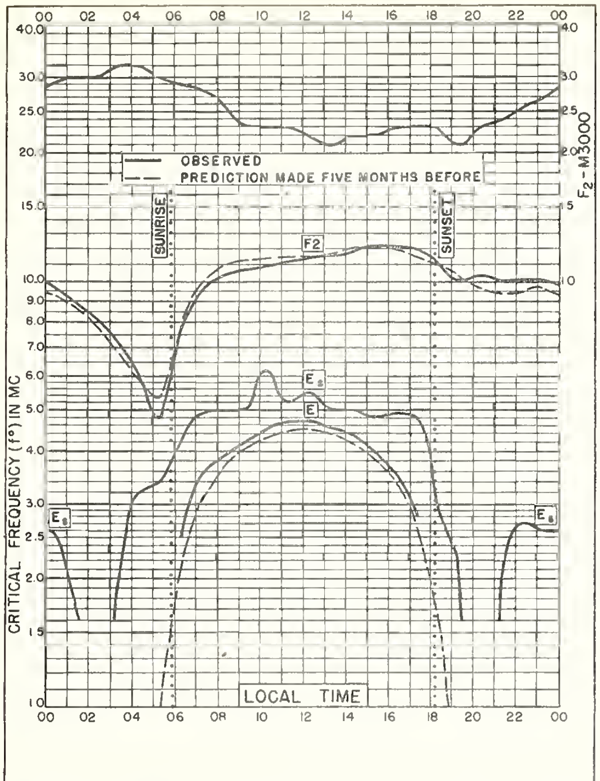

Fig. 36. LEYTE, PHILIPPINE IS.
11.0°N, 125.0°E AUGUST 1948

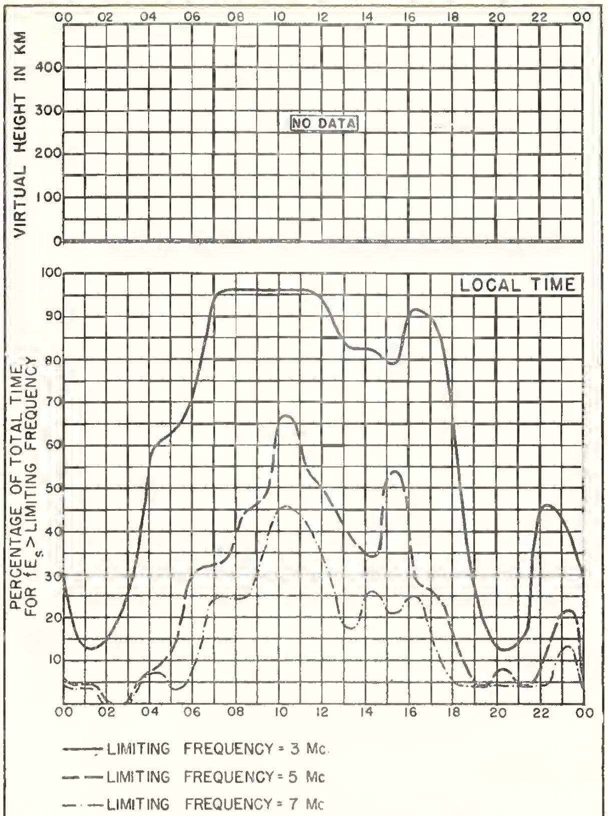

Fig. 37. LEYTE, PHILIPPINE IS. AUGUST 1948

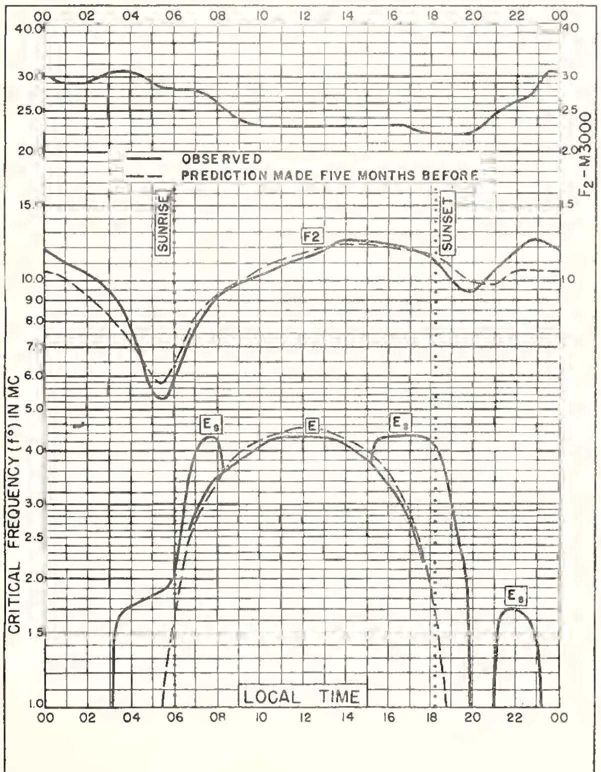

Fig. 38. PALMYRA I.
5.9°N, 162.1°W AUGUST 1948

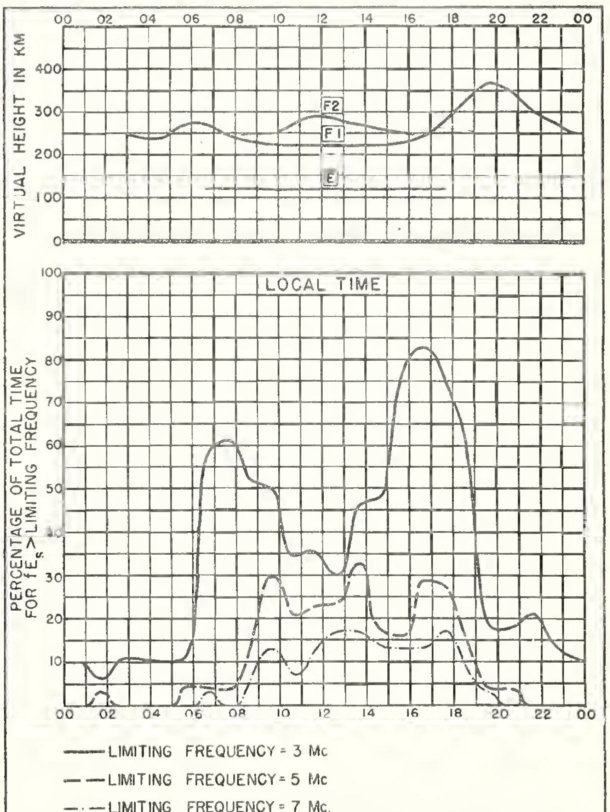

Fig. 39. PALMYRA I. AUGUST 1948

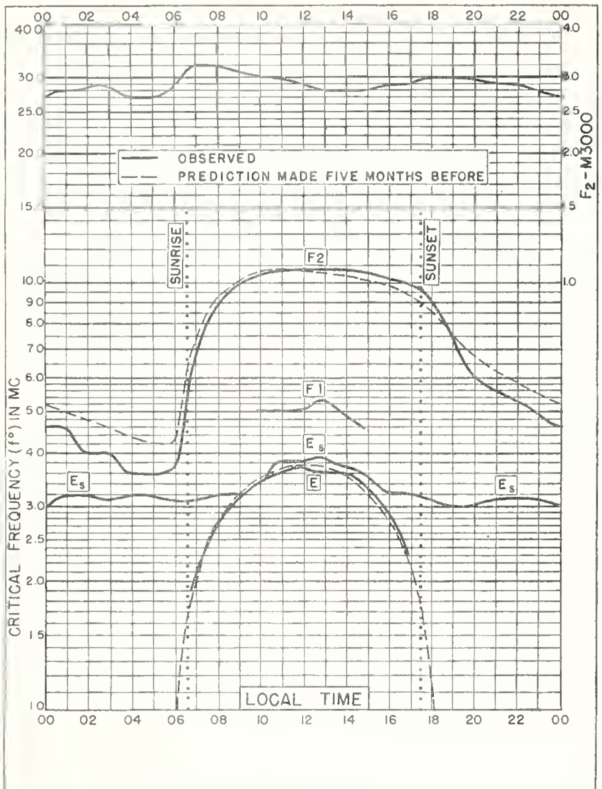

Fig 40. WATHEROO, W AUSTRALIA
30.3°S, 115.9°E AUGUST 1948

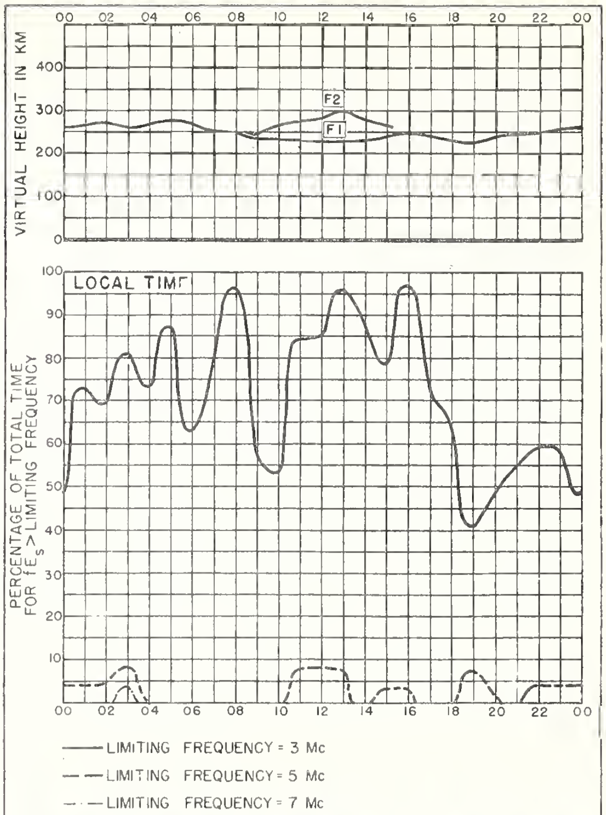

Fig 41. WATHEROO, W. AUSTRALIA AUGUST 1948

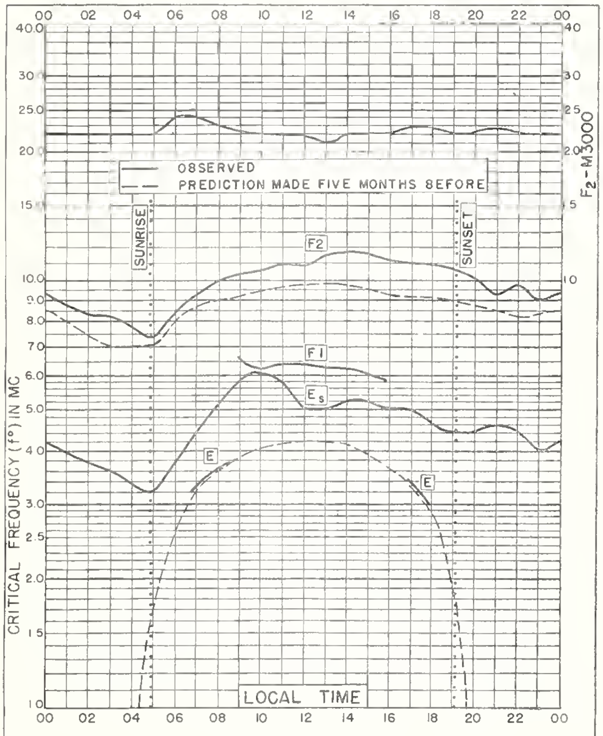

Fig. 42. LANCHOW, CHINA
36.1°N, 103.8°E JULY 1948

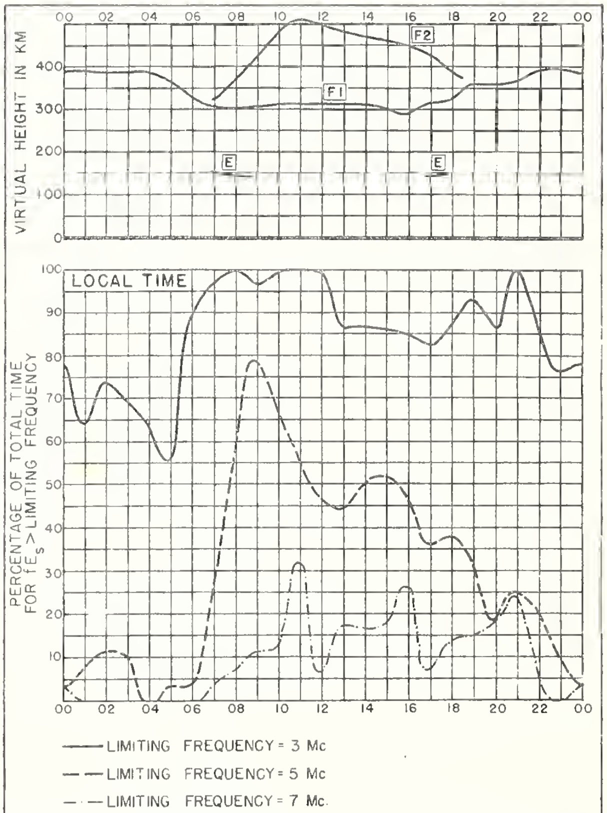

Fig 43. LANCHOW, CHINA JULY 1948

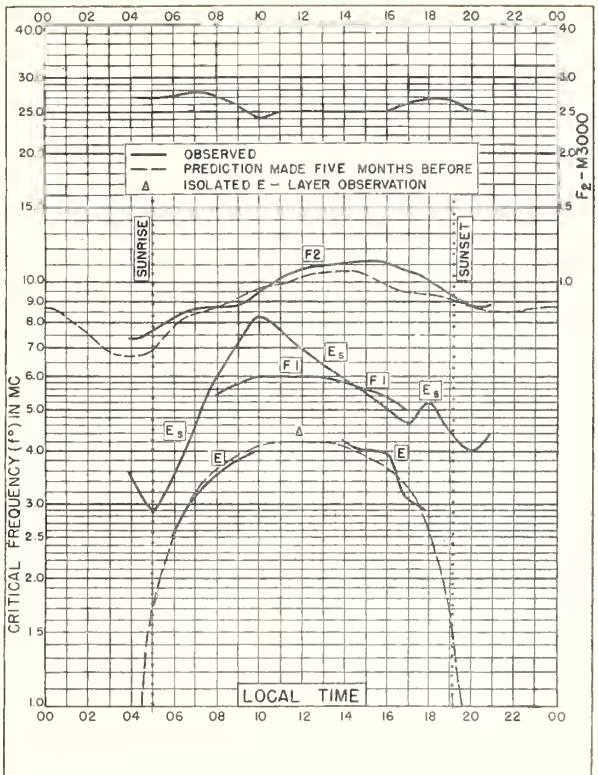

Fig. 44. NANKING, CHINA
32.1°N, 119.0°E JULY 1948

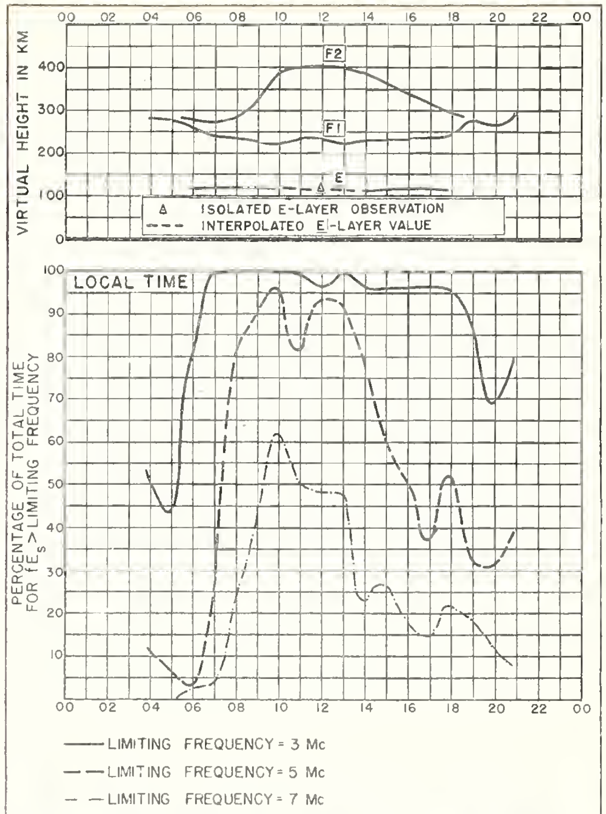

Fig. 45. NANKING, CHINA JULY 1948

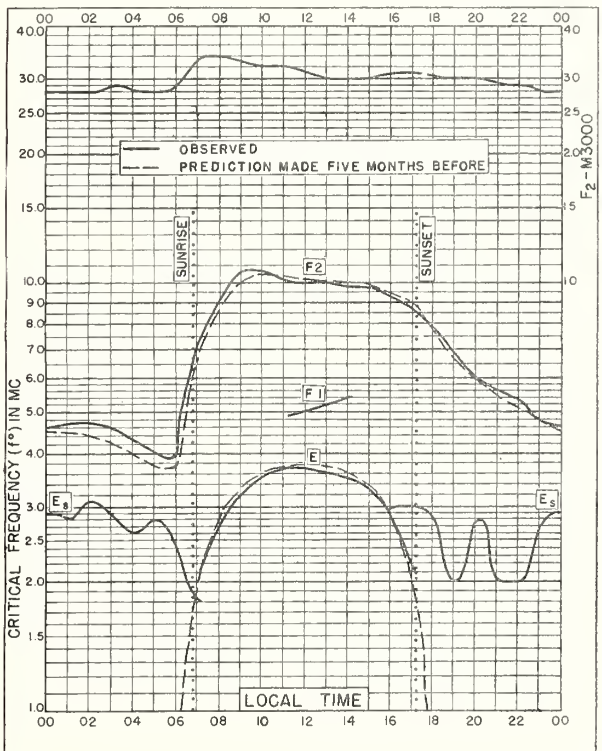

Fig. 46. BRISBANE, AUSTRALIA
27.5°S, 153.0°E JULY 1948

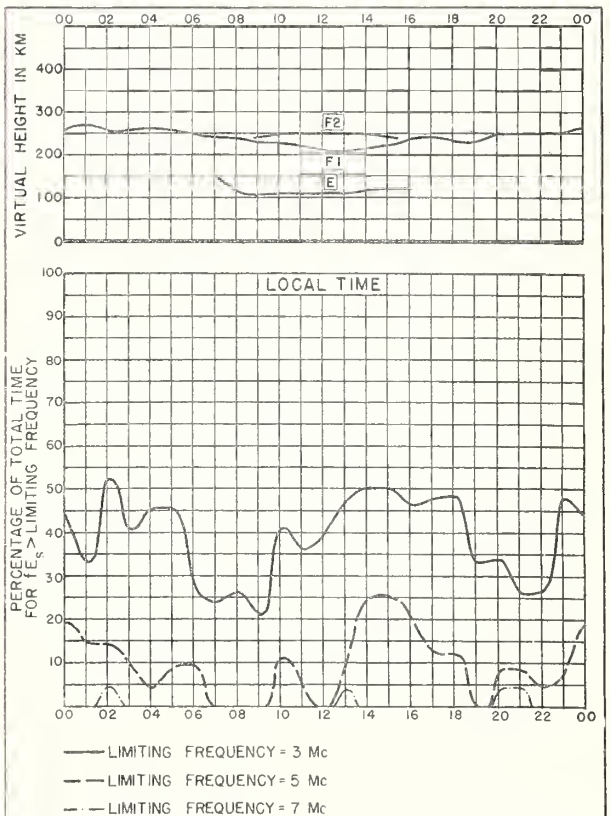

Fig. 47. BRISBANE, AUSTRALIA JULY 1948

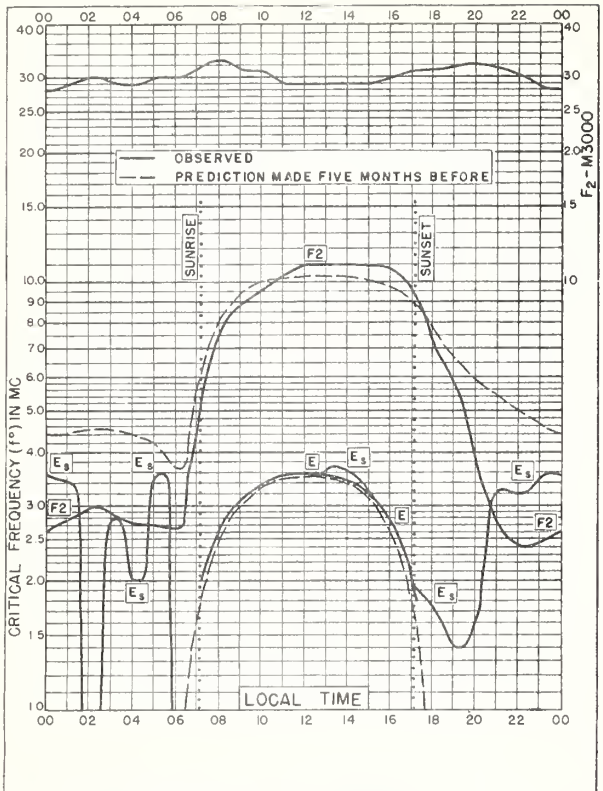

Fig. 48. CAPETOWN, U. OF S. AFRICA
34.2°S, 18.3°E JULY 1948

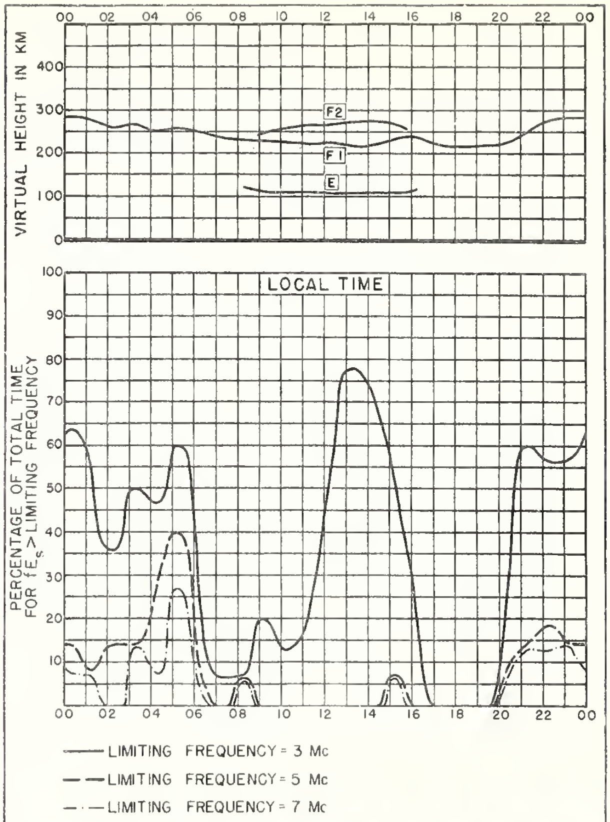

Fig. 49. CAPETOWN, U. OF S. AFRICA JULY 1948

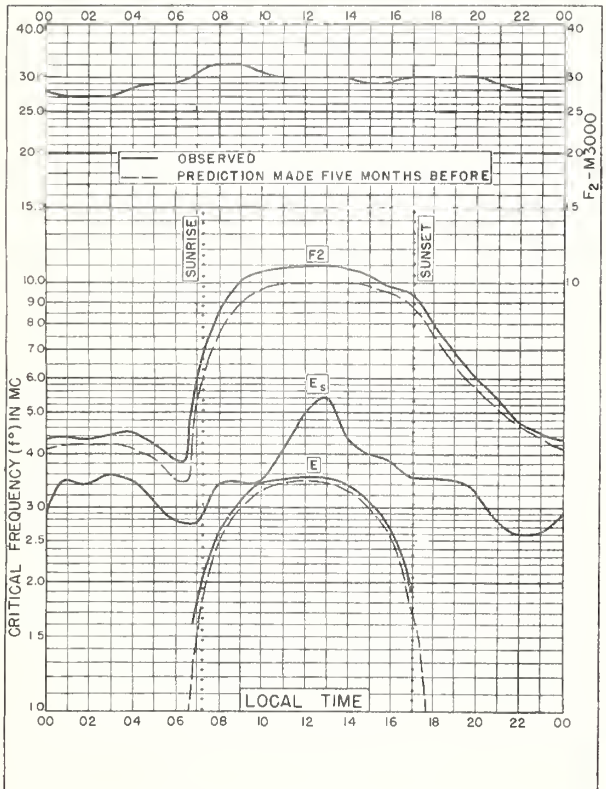

Fig. 50. CANBERRA, AUSTRALIA
35.3°S, 149.0°E JULY 1948

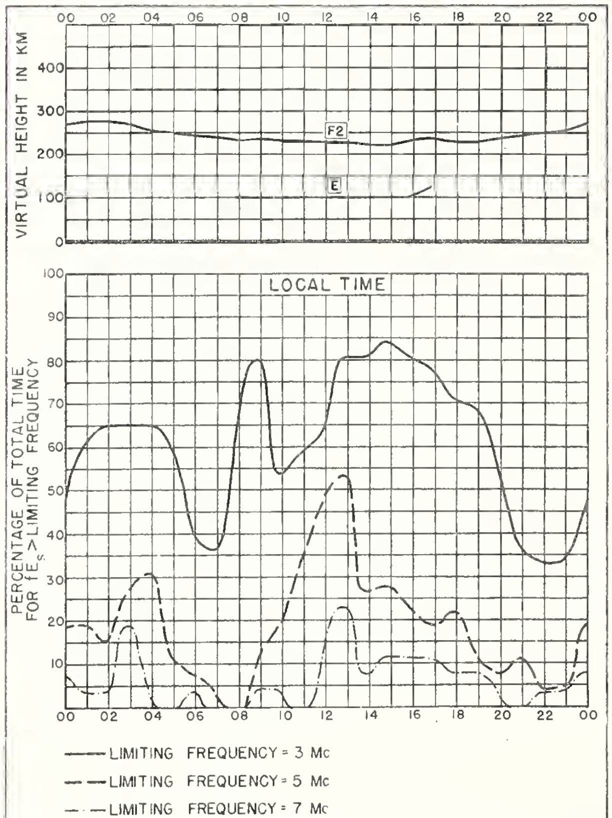

Fig. 51. CANBERRA, AUSTRALIA JULY 1948

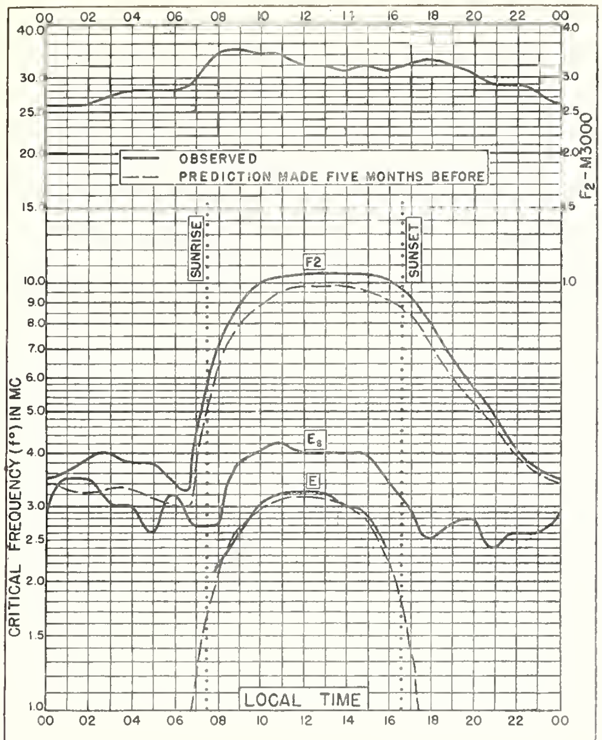

Fig. 52. HOBART, TASMANIA
42.8°S, 147.4°E JULY 1948

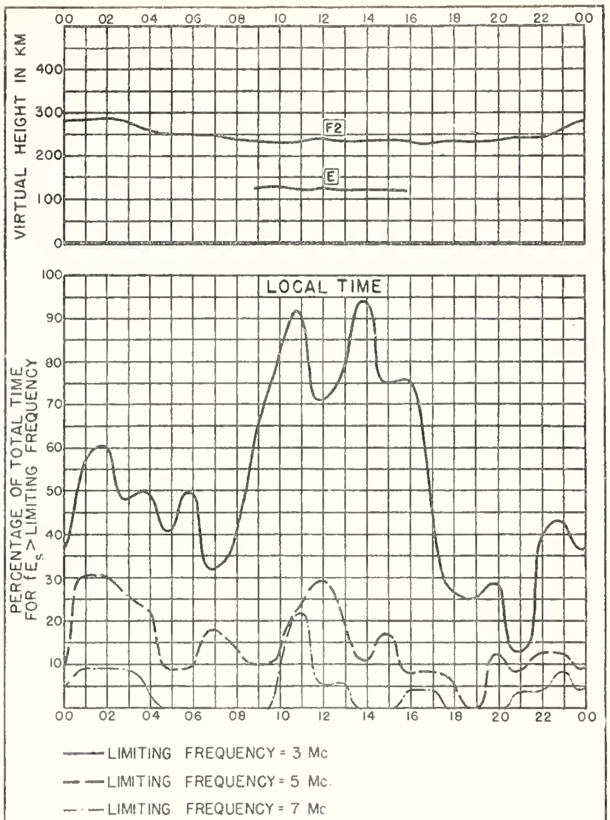

Fig. 53. HOBART, TASMANIA JULY 1948

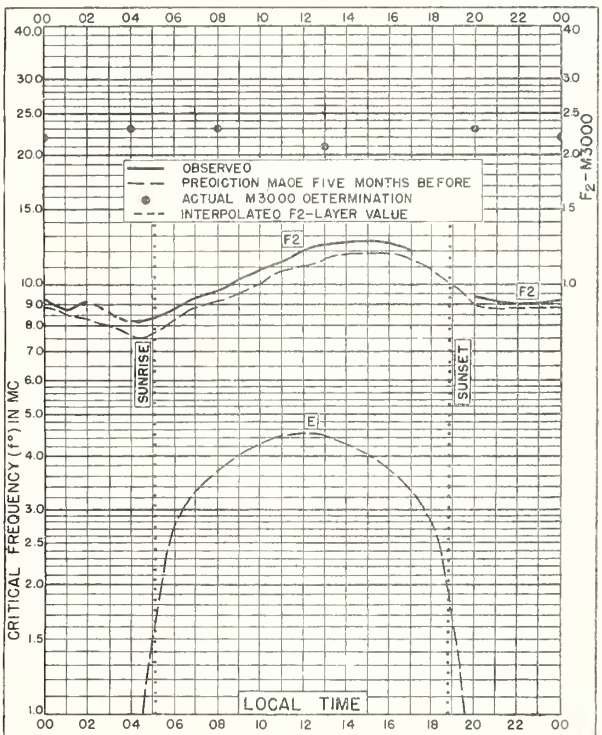

Fig. 54. DELHI, INDIA
28.6°N, 77.1°E JUNE 1948

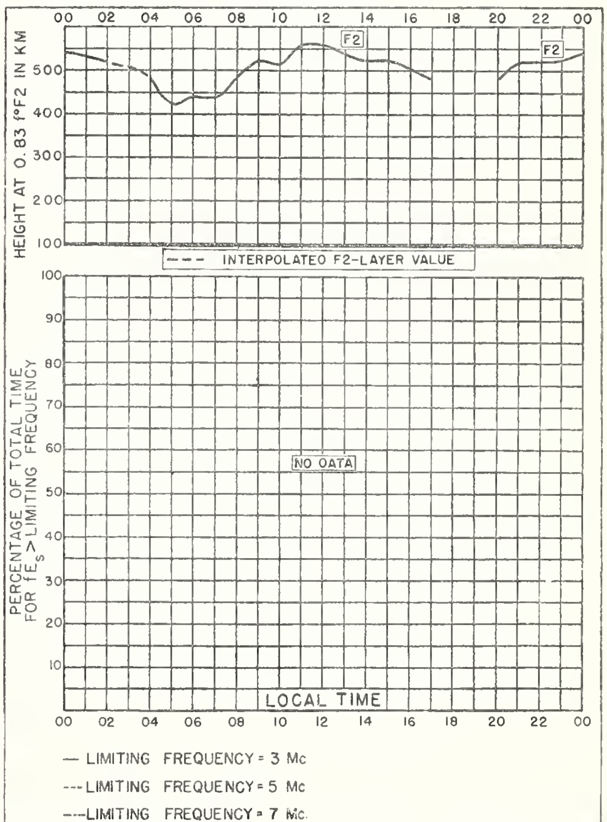

Fig. 55. DELHI, INDIA JUNE 1948

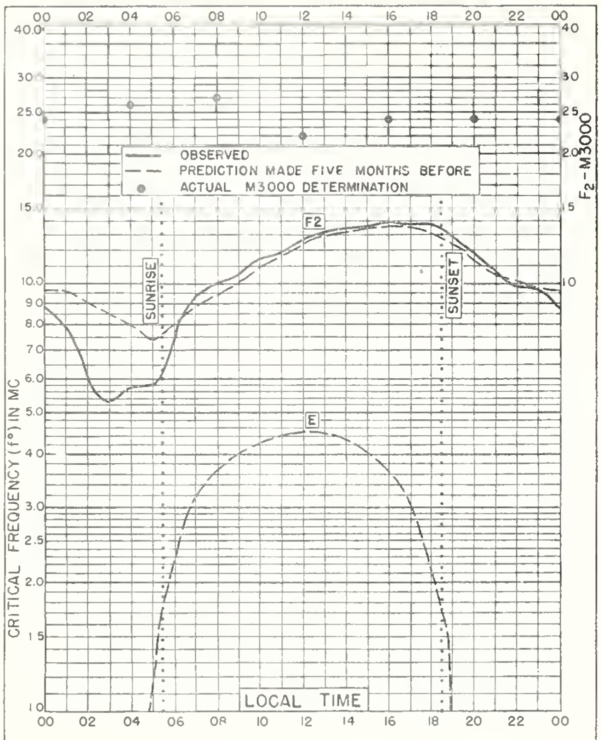

Fig. 56. BOMBAY, INDIA
19.0°N, 73.0°E JUNE 1948

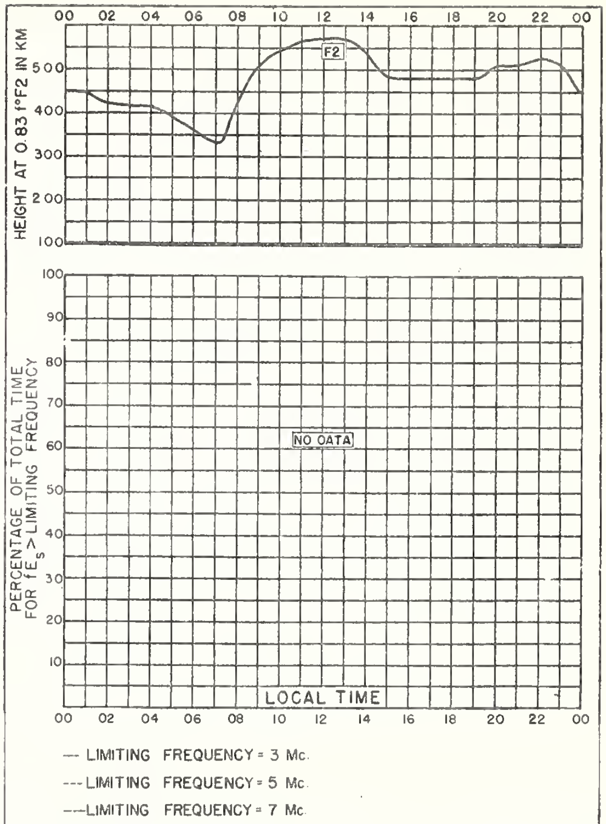

Fig. 57. BOMBAY, INDIA JUNE 1948

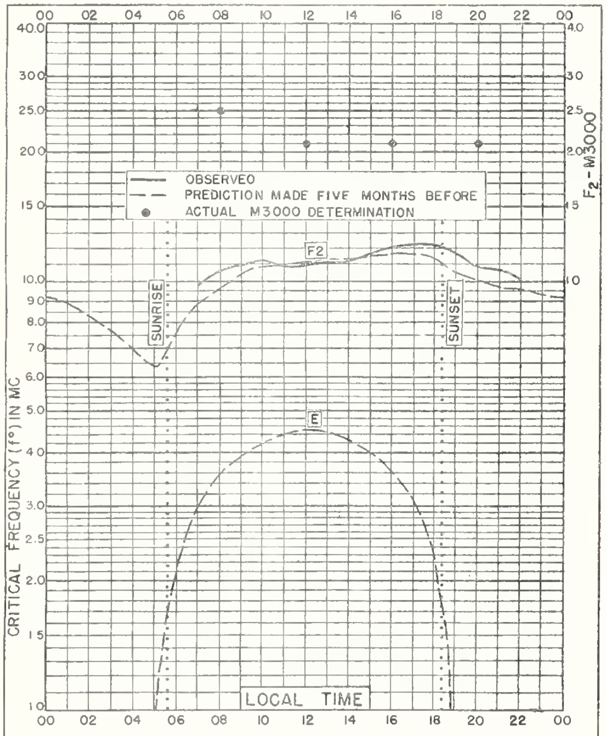

Fig. 58. MADRAS, INDIA
13.0°N, 80.2°E JUNE 1948

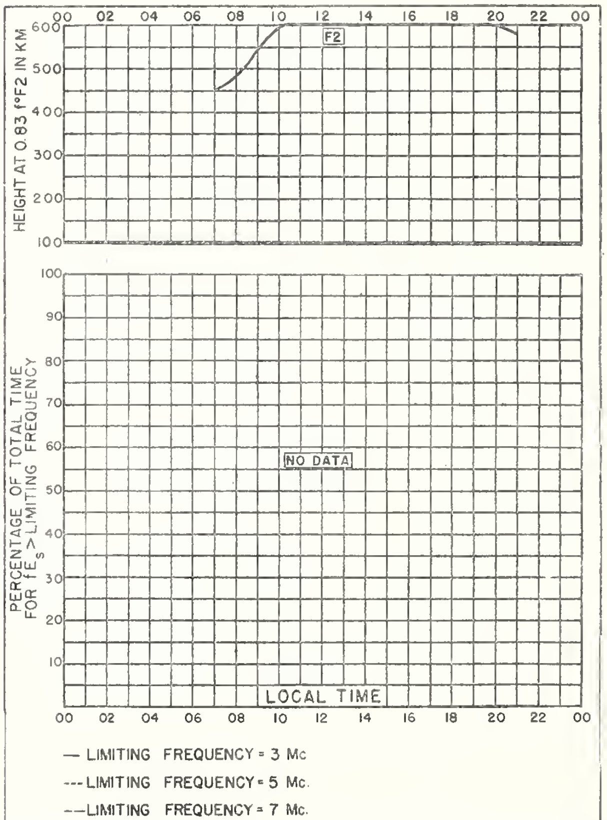

Fig. 59. MADRAS, INDIA JUNE 1948

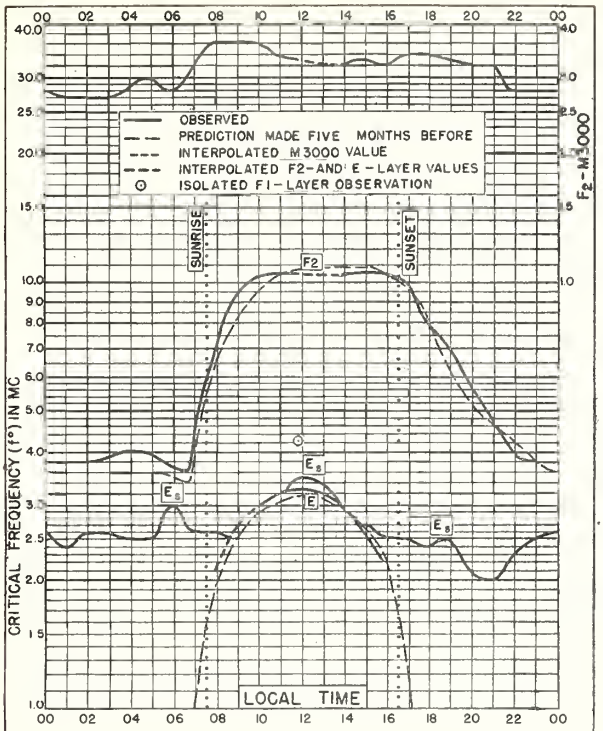

Fig. 60. HOBART, TASMANIA
42.8°S, 147.4°E JUNE 1948

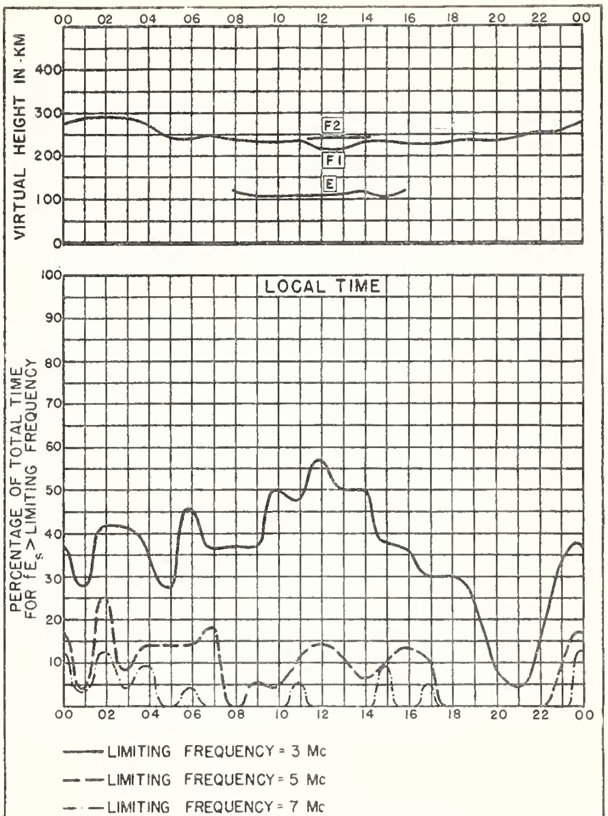

Fig. 61. HOBART, TASMANIA JUNE 1948

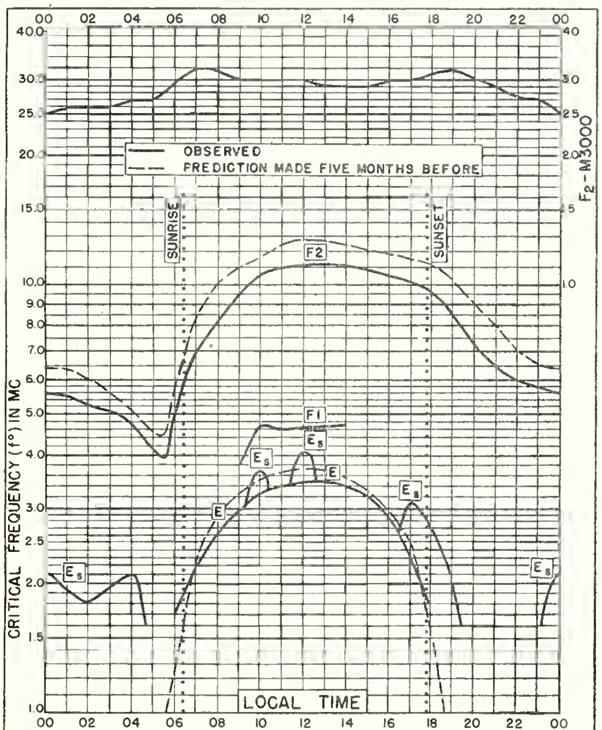

Fig. 62. FRIBOURG, GERMANY
48.1°N, 7.8°E MARCH 1948

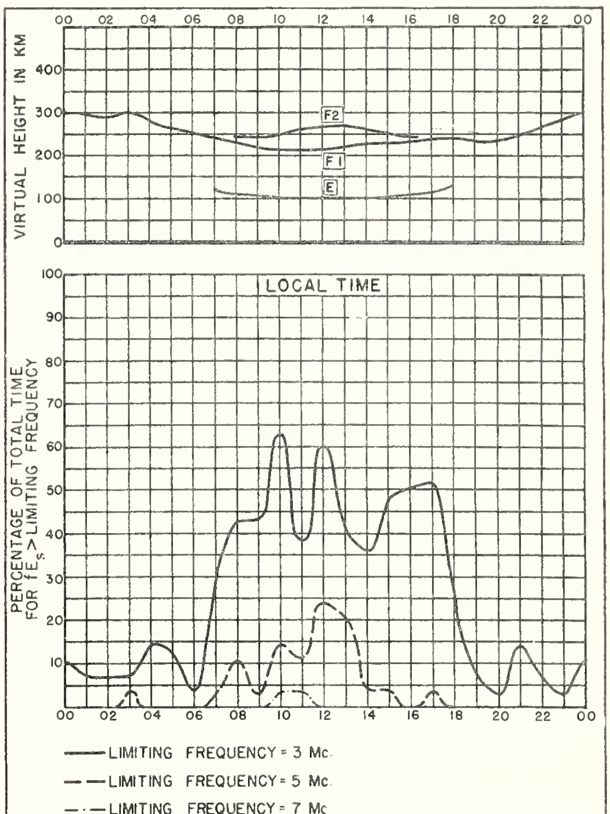

Fig. 63. FRIBOURG, GERMANY MARCH 1948

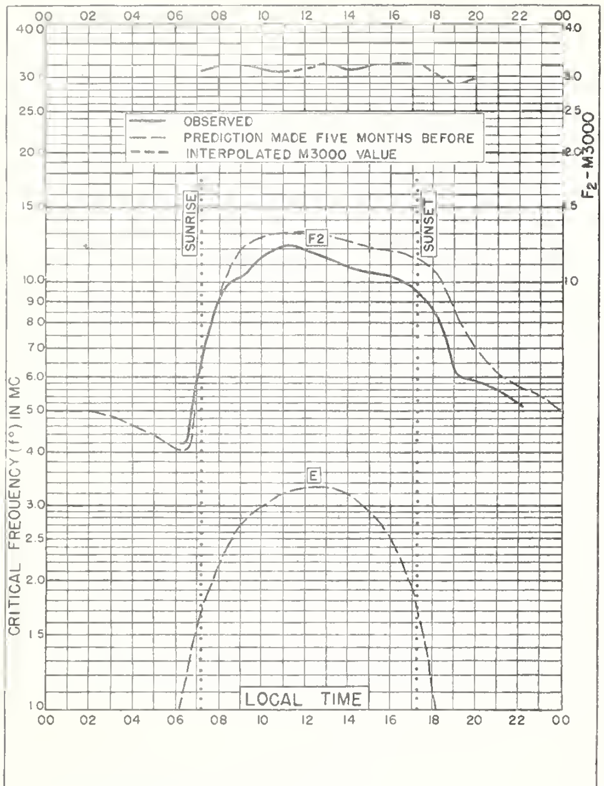

Fig. 64. BAGNEUX, FRANCE
48. 8°N, 2. 3°E FEBRUARY 1948

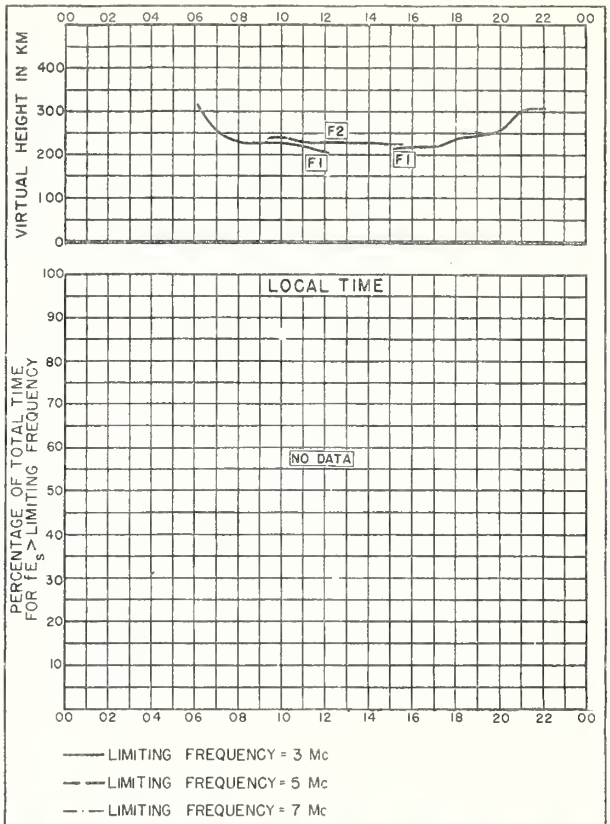

Fig. 65. BAGNEUX, FRANCE FEBRUARY 1948

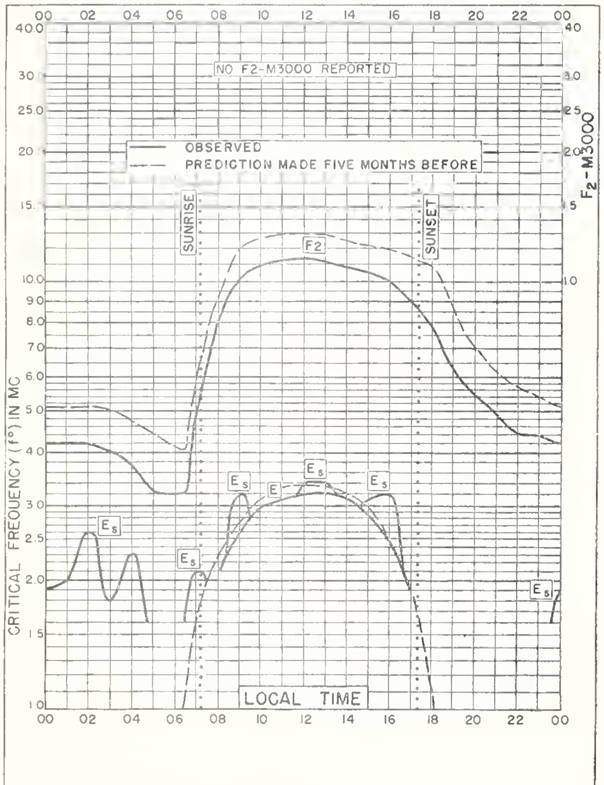

Fig. 66. FRIBOURG, GERMANY
48. 1°N, 7. 8°E FEBRUARY 1948

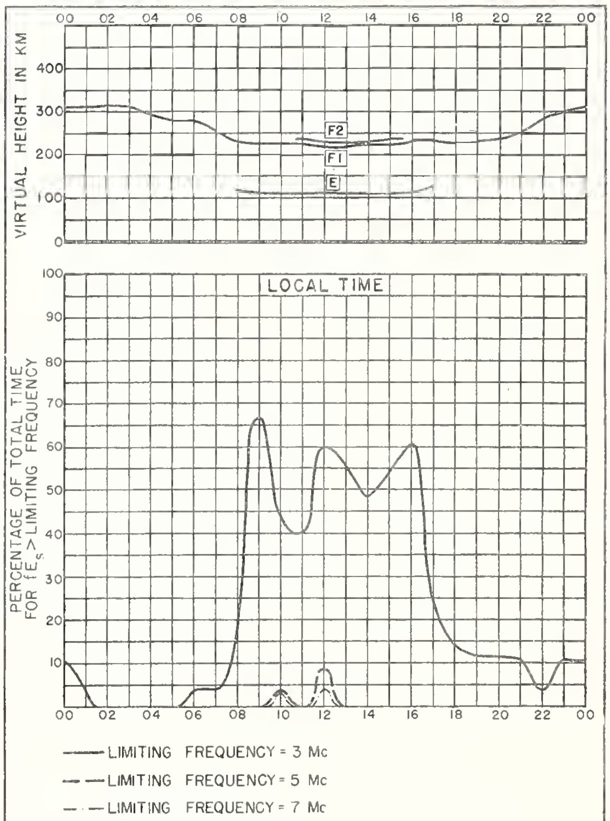

Fig. 67. FRIBOURG, GERMANY FEBRUARY 1948

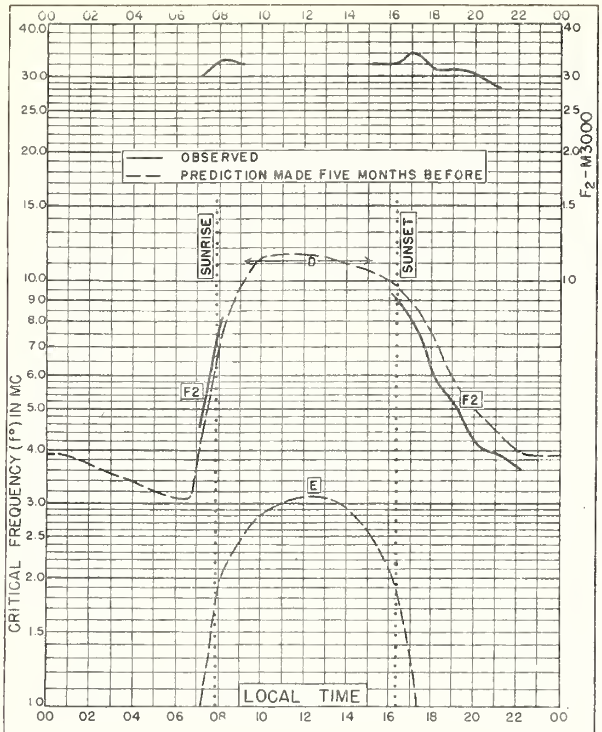

Fig. 68. BAGNEUX, FRANCE
48. 8°N, 2.3°E JANUARY 1948

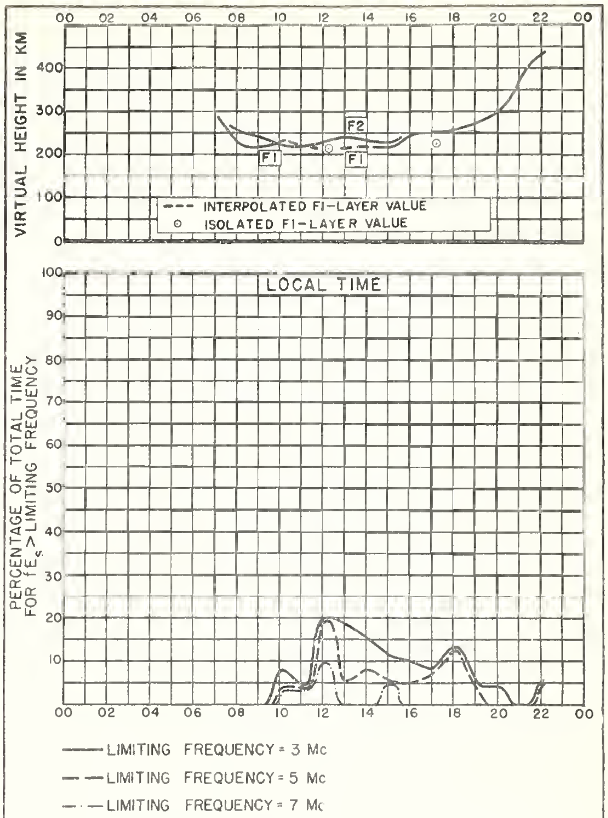

Fig. 69. BAGNEUX, FRANCE JANUARY 1948

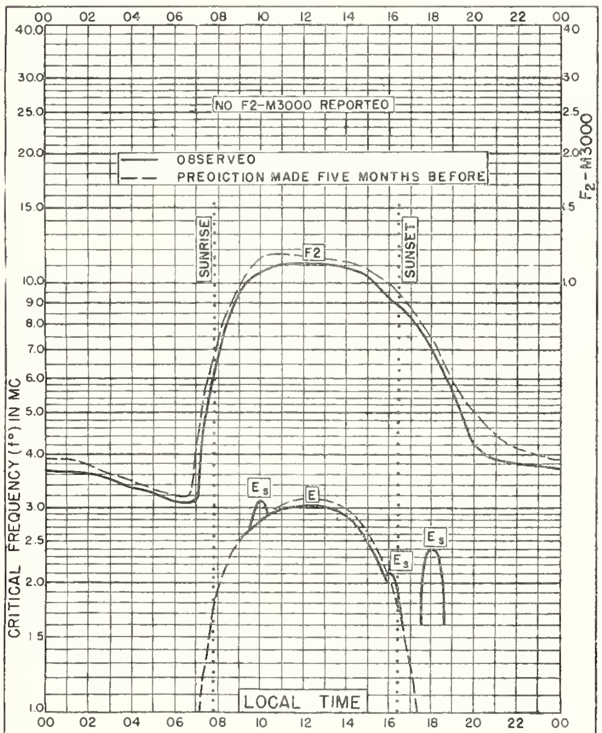

Fig. 70. FRIBOURG, GERMANY
48.1°N, 7.8°E JANUARY 1948

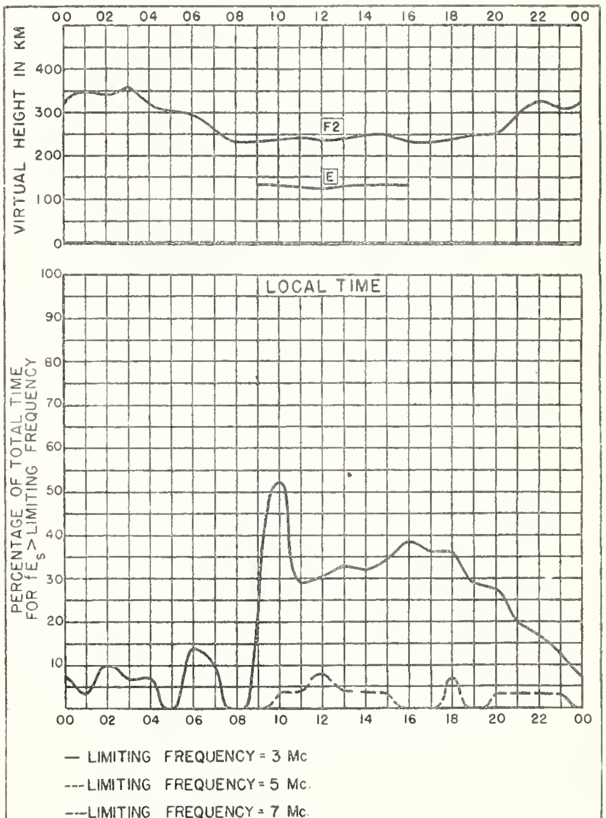

Fig. 71. FRIBOURG, GERMANY JANUARY 1948

Index of Tables and Graphs of Ionospheric Data

in CRPL-F51

Index (CRPL-F51, continued)

CRPL and IRPL Reports

Daily:

Radio disturbance warnings, every half hour from broadcast station WWV of the National Bureau of Standards.
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Weekly:

CRPL–J. Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL–Ja. Semimonthly Frequency Revision Factors for CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL–D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11–499–, monthly supplements to TM 11–499; Dept. of the Navy, DNC–13–1 ( ), monthly supplements to DNC–13–1.)

CRPL–F. Ionospheric Data.

Quarterly:

*IRPL–A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.

*IRPL–H. Frequency Guide for Operating Personnel.

Nonscheduled reports:

CRPL–1–1. Prediction of Annual Sunspot Numbers.
CRPL–1–2, 3–1. High Frequency Radio Propagation Charts for Sunspot Minimum and Sunspot Maximum.
CRPL–1–3. Some Methods for General Prediction of Sudden Ionospheric Disturbances.
CRPL–1–4. Observations of the Solar Corona at Climax, 1944–46.
CRPL–1–5. Comparison of Predictions of Radio Noise with Observed Noise Levels.
CRPL–1–6. The Variability of Sky-Wave Field Intensities at Medium and High Frequencies.
CRPL–7–1. Preliminary Instructions for Obtaining and Reducing Manual Ionospheric Records.
NBS Circular 462. Ionospheric Radio Propagation.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

Reports issued in past:

IRPL–C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
IRPL–G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
IRPL–R. Nonscheduled reports:

- R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.
- R5. Criteria for Ionospheric Storminess.
- R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
- R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
- R11. A Nomographic Method for Both Prediction and Observation Correlation of Ionosphere Characteristics.
- R12. Short Time Variations in Ionospheric Characteristics.
- R14. A Graphical Method for Calculating Ground Reflection Coefficients.
- R15. Predicted Limits for *F*2-layer Radio Transmission Throughout the Solar Cycle.
- R16. Predicted *F*2-layer Frequencies Throughout the Solar Cycle, for Summer, Winter, and Equinox Season.
- R17. Japanese Ionospheric Data—1943.
- R18. Comparison of Geomagnetic Records and North Atlantic Radio Propagation Quality Figures—October 1943 Through May 1945.
- R19. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for June.
- R20. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for September.
- R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)
- R22. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for December.
- R23. Solar-Cycle Data for Correlation with Radio Propagation Phenomena.
- R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.
- R25. The Prediction of Solar Activity as a Basis for the Prediction of Radio Propagation Phenomena.
- R26. The Ionosphere as a Measure of Solar Activity.
- R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.
- R28. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for January.
- R30. Disturbance Rating in Values of IRPL Quality-Figure Scale from A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.
- R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.
- R32. Nomographic Predictions of *F*2-layer Frequencies Throughout the Solar Cycle, for February.
- R33. Ionospheric Data on File at IRPL.
- R34. The Interpretation of Recorded Values of *fEs*.
- R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc.

IRPL–T. Reports on tropospheric propagation:

- T1. Radar operation and weather. (Superseded by JANP 101.)
- T2. Radar coverage and weather. (Superseded by JANP 102.)

CRPL–T3. Tropospheric Propagation and Radio-Meteorology. (Reissue of Columbia Wave Propagation Group WPG–5.)

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